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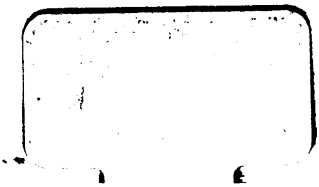

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WATER POLO AT THE NEW YORK ATHLETIC CLUB.

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ATHLETIC SPORTS

BY

D. A. SARGENT, M.D.
H. J. WHIGHAM
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MARGUERITE MERINGTON
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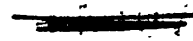

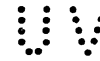

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THE PHYSICAL PROPORTIONS OF THE TYPICAL MAN

By D. A. Sargent, M.D.

Fig. 1. — Method of Testing the Strength of the Chest and Triceps.

AT no time in the history of our country has more attention been given to the subject of physical training than is given to it at the present day. Schools, colleges, and Christian associations are building costly gymnasia, while athletic organizations, ball-clubs, tennis-clubs, boat-clubs, etc., are forming in many of our towns and cities.

Fifteen thousand dollars is expended annually to bring the Yale and Harvard boat-crews together at New London, and it is estimated that fifty thousand dollars does not meet the yearly expenses of the athletic organizations of these two universities. Add to this sum the cost of athletic

sports to the smaller colleges and city clubs, and the total would foot up in the millions.

The object of this outlay is to vanquish some rival club, to win a championship, to beat the record, or to furnish recreation and amusement to those who are willing to pay for it. With the representatives of our institutions of learning, and with a portion of the intelligent public, the object of the encouragement given to athletics is to counteract the enervating tendency of the times, and to improve the health, strength, and vigor of our youth.

This being the fact, the questions at once arise: How large a proportion of young men in the land systematically practise athletics?

Probably less than one per cent.

How large a proportion of those who are members of athletic organizations take an active part in the sports fostered and patronized by their respective clubs?

Probably less than ten per cent.

In the opinion of the writer, the cause for so little active interest in athletics is an increasing tendency with us, as a people, to pursue sport as an end in itself, rather than as a means to an end.

In making excellence in the achieve-

ment the primary object of athletic exercises, we rob them of half their value in various ways: —

(I.) *By increasing the expense of training.* The money expended at the present day on an athletic team is greatly in excess of the amount spent upon the same number of men a few years ago. This increased expenditure may be attributed to the improved facilities demanded for practice, to the establishment of training-tables, the employment of "coaches," or trainers, and special attendants, — the latter to anoint and rub the athletes, look after the boats, ground, running-tracks, etc., — to the purchase of uniforms, the expenses of travelling, etc. A long purse is fully as essential to success in athletics as in war or politics.

Fig. 2. — Method of Testing the Strength of Back and Legs.

(II.) *By increasing the time devoted to practice.* In former years it was deemed advisable to practise no sport out of season. At the present time it is found necessary to skate

in the summer, and to row and play ball in the winter months, in order to maintain the high standard of excellence demanded of those who would win prizes in these events. In fact, any athlete, to stand above mediocrity in his chosen sport, must keep in practice the greater portion of the year. So severe a tax is this upon the time and energies of those who are engaged in other occupations that it is quite impossible for them to attend to business; consequently the attempt to make a business of sport is the first step in the direction of professionalism. It is a question, indeed, if many of our so-called amateurs, who devote so much of their time to the practice of athletics, do not belong to the professional class. In either case, the effect they have upon the practice of athletics is detrimental.

(III.) *By reducing the number of active competitors.* A characteristic trait of human nature is the desire to excel. Excellence in one thing often presupposes excellence in another, though none knows better than the specialist in athletics how weak he is outside of his favorite sport. A man who gains the reputation of being a champion oarsman or tennis-player will in all probability confine his athletic ef-

forts to his specialty, thinking it unwise to risk a well-earned reputation as an expert in one sport by dawdling with another. Moreover, so strong is this desire to be-

Fig. 3.—Method of Testing the Strength of the Forearms and Hands.

come a skilful exponent of an art or sport which one has adopted as a pastime, that as soon as circumstances debar a man from the required amount of practice necessary to maintain a high degree of excellence, he is likely to withdraw from all active participation in the game. In this way the number of competitors in every sport is gradually reduced, until the actual practice is left largely in the hands of a class of experts.

(IV.) *By relying upon natural resources rather than upon cultivated material.* As

athletics approaches a higher standard the time required for development is necessarily lengthened. For this reason those who are naturally strong and vigorous, or who have inherited or acquired the qualifications requisite to success in a given sport, are in great demand. The college clubs look to the academies, the academies to the schools, the schools to homes and firesides, to furnish candidates for athletic honors, while many of the city clubs are eager to absorb members from any source that is capable of supplying them with good athletic material.

(v.) *By depriving the non-athletic class of every incentive to physical exertion.* So long as accomplishing a feat, winning a prize, and breaking a record, are the only objects of systematic physical training, a man who lacks the requisite qualifications of a successful athlete is likely to despair at the outset. Ask the members of any athletic organization why they do not take an active interest in the sports their club is supposed to foster, and you will be told that the standard is too high for them, that they cannot spare the time for practice, or that they are too light or too heavy, and would not be a credit to the club.

In our colleges few men practise run-

ning, rowing, ball-playing, etc., systematically without a hope of becoming members of the "crew," "nine," or "eleven." "No chance for the prize" is considered a laudable excuse for neglecting many admirable exercises, such as sparring, fencing, and jumping.

In consequence of this erroneous idea as to the ultimate object for which all sports are encouraged, a small portion of the community are overdoing the practice of these valuable adjuncts to health and education, while the vast majority are not availing themselves of their advantages. In fact, the importance of winning an athletic victory is becoming so exaggerated in the minds of many young men, that some of them have already resorted to unscrupulous methods as a means to the much-desired end.

Many men fail to realize that the real value of athletics is in the preparatory training, not in the contest or in the prize. Long before the day of trial, unseen forces are at work building up a structure fit to stand the test and to make a noble effort for the victory. Whether the coveted prize be won or lost is of little importance compared to the prize in shape of an improved physique already in possession of

those who have undergone a faithful course of training.

(VI.) *By arousing the spirit of antagonism and fostering viciousness and brutality.* In all competitive sports that bring individuals into personal contact, such as wrestling, sparring, foot-ball, lacrosse, polo, etc., there is a constant tendency to roughness and brutality. The object being to "win at all hazards," the reason for the roughness is apparent. These sports without doubt furnish the best kind of general exercise for the body, and develop courage, manliness, and self-control. How to retain the good features, and to hold the evil ones in check, are the problems that are ever present to those who are interested in the preservation of these invigorating pastimes. They are worth perpetuating, and ought not to fall into disrepute for the want of a few friends to throw a protecting influence around them. Certain it is that as soon as brutality gains the ascendency gentlemen will cease to compete, and the sport will fall into decline. It is a question now in the minds of many whether some of these sports have not already reached a stage of deterioration in which, in the colleges at least, their future existence is threatened.

(VII.) *By depriving them of their efficacy as a means to health.* An individual having this aim (excellence in the achievement) in view, and having decided upon a specialty in athletics, at once proceeds to strengthen those muscles most used in his chosen sport. The runner or jumper develops his legs, the oarsman his legs and back, and the gymnast his arms, chest, and shoulders. The runner argues that the heavier his body is above the hips, so much more of a burden is there for him to carry; the gymnast reasons in a similar way with regard to the weight of his body below the hips.

Figure A.

There is a constant tendency on the part of specialists to overdevelop a few sets of muscles, and to undervalue the importance of keeping the muscles all in a healthy condition. Consequently, through incompleteness of structure and a want of harmony in function, some local weakness is produced which sooner or later

not only incapacitates the individual for any great mental or physical effort, but also renders him liable to disease.

What is true of athletics to-day was equally true of gymnastics some fifteen or twenty years ago. Many of our college and city gymnasia were in the hands of a class of experts and specialists, who selected the apparatus as a means of exhibiting their strength and prowess rather than a means of physical culture and self-improvement. The weaker members, finding few forms of apparatus that were suited to their capacity, would stand idle, content with admiring the exploits of their more vigorous companions. In fact, a man was made to feel that the gymnasium was no place for him unless he at least could turn a backward somersault, do the giant's swing, or hang by his toes.

It would be foreign to my purpose to carry this discussion any further at the present time. My object has been merely to show that all sports, exercises, and pastimes, pursued as ends in themselves, are necessarily limited to a very small class, and constantly tend to degenerate.

What, then, can be done to make physical exercise more attractive to the masses, and to relieve our popular sports of some

of the evils that tend to degrade them? I know of no better way of accomplishing this desirable end than by repeatedly reminding the individual of the ultimate aim of every kind of physical exercise. Do not the harmonious development of the physique, and the building up and broadening out of the highest types of manhood and womanhood, offer an inducement to work for?

This has been the theme of the philosophers and sages of all times. Every writer on education, from Plato to Herbert Spencer, has advocated physical activity as a means of attaining that full-orbed and harmonious development of all parts of the human economy so essential to robust, vigorous health.

We have had no end of treatises on the sports, games, and gymnastic exercises that are reputed to give strength and symmetry to the body; but, unfortunately, the wise and good men of old have left us no standards by which to judge of symmetry or strength. The ancient masterpieces are models of symmetry and beauty, but they were made largely from ideal standards, certainly not from actual measurements; while the miraculous exhibitions of strength attributed to some of the Grecian athletes

must, in the light of the present day, be regarded as a trifle mythical. Is this love of symmetry in form a myth, or has it a deep moral significance? I hold that it has not only a moral significance, but also a physiological significance, and that the size, shape, and structure of the body have a direct dynamic relation to all the vital organs, and appreciably influence the functions of the brain and nervous system.

Figure B.

Aside from the investigations of the Provost-Marshal-General's Bureau, of the Sanitary Commission, on recruits during the late war, and of the Anthropometric Committee of the British Association for the Advancement of Science, but little systematic effort has been made to obtain reliable information by means of physical measurements. As to the actual size or proportions of the body at various ages and among different nationalities, there are absolutely no data to which we can turn for assistance in shaping the course of growth and development. True, there is an abundance of data on the

height, weight, and chest-girth of person- of different ages and nationalities, and the dimensions of other parts of the body have been taken at various times by artist anatomists, military surgeons, and gymnasiarchs, yet no one system of measurements has ever been adopted by any two examiners; on the contrary, each observer has taken measurements for a specific purpose, according to a system peculiar to himself, so that we look in vain for anything like harmony or congruity in the results obtained. In some cases the subjects are measured or weighed without clothing, and in others partly or completely clothed. In one class of measurements the height is taken with the boots on, in another class with the boots off, while by another observer the girth measurements are taken with the muscles contracted at one part of the body.

What is most needed at the present day is a uniform system of measurements, and a common understanding among observers as to what points and under what conditions the various parts of the body are to be measured; a great step will then be taken toward securing valuable anthropometric data.

Having resolved some years ago to make physical training my profession, and be-

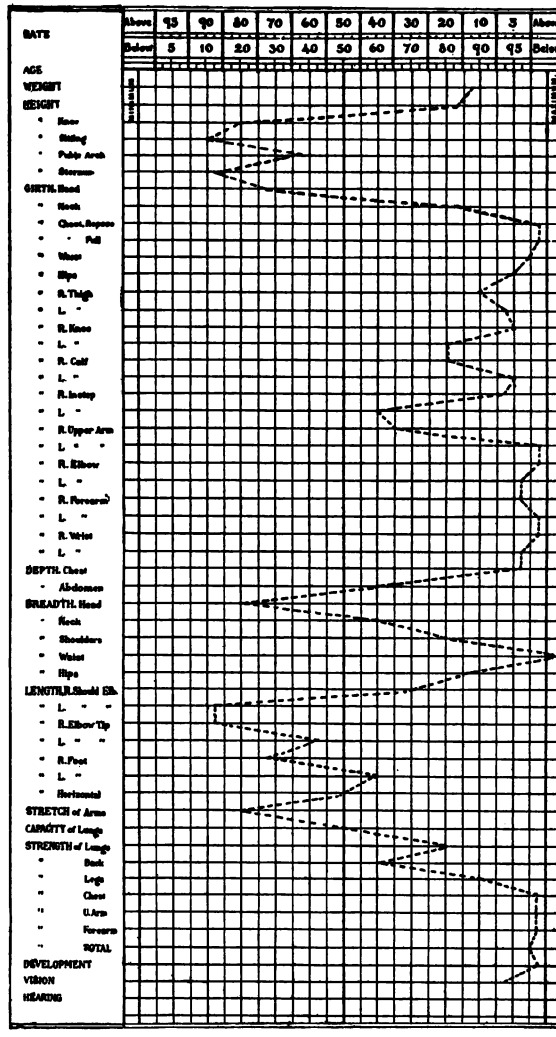

Chart I., plotted from the original of Figs. A and B.

lieving that all teaching should be preceded by inquiries into the "nature, capabilities, and requirements of the being to be taught," I began a system of independent investigation with regard to the growth and development of the body under the various conditions of life.

I was moved to this undertaking by the conviction that whatever might be the nature of the physical training pursued, the ultimate object should be the improvement of the individual. "The indispensable part of the experimental observation of physical facts," says a distinguished philosopher, "is the measurement of quantities."

I resolved, therefore, to widen the range of observations, believing that on the simple factors — weight, height, and chest-girth — could not be based a true estimate of one's physical condition. I had seen weight obtained at the expense of structure, height at the expense of circumference, and the girth of the chest increased as the girth of the lower limbs diminished. I had found that increase of stature might be largely due to great length of neck and legs, with a comparatively short body, and that these proportions, which would indicate weakness rather than strength, could not be brought out by taking only the

stature. Realizing how much depends upon the proportions of the different parts of the body, the comparative size of body and limbs, the difference between bone and muscle measurements, etc., I began my observations by an extended series of measurements.

My next aim was to test the strength of the most important parts, so far as this was practicable. As a general rule, the girth of the upper arm may be said to represent the potential strength of the biceps and triceps muscles. So, too, the girth of the forearm, thigh, leg, or chest is usually indicative of the latent power of the muscles in that particular region. These facts are familiar to any schoolboy who has learned from his daily experiences to associate size with strength. There are many exceptions to this rule, however; and the record of the tape-measure often needs to be confirmed by an actual strength test. In order to make these trials, I had recourse to three spring-dynamometers, a spirometer, manometer, a pair of suspended rings, and a set of parallel bars. With these appliances it is possible to test the strength of nearly every part of the body. I limited these tests to the back, legs, chest, upper arm, and forearm.

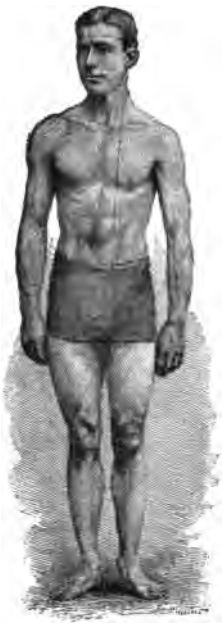

Figure C.

The strength of the back and legs was tested by a dynamometer (see Fig. 2). The strength of chest, triceps, and back was determined by the number of times that the subject could raise his weight between the parallel bars while supporting himself on his hands. The number of times a person, while holding on to the suspended rings, could raise his own weight by contracting the arms was the manner of testing the biceps, chest, and upper back. The strength of the chest and triceps of all who were unable to lift their own weight was tested by means of a dynamometer constructed for the purpose (see Fig. 1). The strength of the forearms and hands was tested by a hand-dynamometer (see Fig. 3). The capacity of the lungs was determined by the number of cubic inches of air the individual could blow into a spirometer. The manometer was used to test the strength of lung-tissue and the force of the expiratory muscles.

In order to form some idea of the general strength of the individual, the results of the several tests were summed up. The amount represented the total strength so far as determined. I should add that, before summing up the result of the arm or chest tests, the number of times that a person had lifted himself either way was multiplied into a tenth of his weight, the object being to credit each person with the number of foot-pounds lifted, rather than to reckon the number of times the body was raised, without regard to its weight. A tenth of the weight was decided upon in order to reduce the number of figures that would result from the multiplication.

To add interest to the work, the girths of the head, chest (natural and inflated), waist, thighs, upper and forearms — these being the parts tested — were summed up. The difference between this amount, which was taken to represent the potential strength, and the amount found to represent the actual strength, was termed the *condition*.

In tabulating the first thousand measurements, the sum of the figures representing the potential strength and the sum of the figures representing the actual strength were found to correspond very closely in

healthy persons who had received no preparatory training. This fact, though really an accidental discovery, was made by construction a relative standard to work by. If the actual strength exceeded the potential strength, the condition was marked plus the amount of the excess. If the actual strength fell short of the potential strength, the condition was marked minus the amount of the deficiency.

In order to ascertain the influence of the various conditions of life upon the growth and development of the individual, answers to the following questions were solicited:

Name or number.
Class and department, or occupation.
Age, yrs. ms. Birthplace.
Nationality of father, mother.
" " his father, her father.
" " his mother, her mother.
Occupation of father.
If father is dead, of what did he die?
If mother is dead, of what did she die?
Which of your parents do you most resemble?
What hereditary disease, if any, is there in your family?
Is your general health good?
Have you always had good health?

Check (✓) such of the following diseases as you may have had:—

Asthma, Dizziness, Gout, Pleurisy, Palpitation of the Heart, Pneumonia, Habitual Constipation, Bronchitis, Dyspepsia, Rheumatism, Shortness of Breath, Headache, Varicose Veins, Spitting of Blood, Chronic Diarrhœa, Dysentery, Neuralgia, Jaundice, Piles, Liver Complaint, Paralysis.

What injuries have you received?
What surgical operation have you undergone?

It frequently happened that answers to these questions would account for some peculiarity of development or some deficiency in the size of body or limbs, or for extreme muscular weakness, that could not otherwise be explained. Immediately before and after the strength-tests the heart and lungs were examined by auscultation and percussions, and any peculiarities noted. The information obtained from the physical examination just described, in connection with the history of the individual and the many facts brought out by personal observation, served as a basis for advice.

At the time the system I am now discussing was inaugurated, the gymnasium was wholly inadequate to meet the demands of at least two-thirds of the pupils who came under my observation. Most of them had discovered this fact for themselves, and had let the gymnasium and its apparatus severely alone. The tendency to specialism already alluded to had served to make the gymnasium distasteful to many who wished to use it, but who had neither the ability nor inclination to perform the feats usually practised on the old-style apparatus. In order to make the gymnasium serviceable to a larger portion of the community, and especially to those most

needing its advantages, it seemed necessary that a new system of apparatus should be introduced, and a new spirit infused into the institution. With this aim in view, I devised a system of appliances designed to develop the different parts of the body, and to be adjusted to the strength of the strong or the weakness of the weak.

In introducing these mechanical devices into the gymnasium, I made a radical departure from one of the traditions that had governed physical education in the past. The idea had become thoroughly established in the community, that in order to be beneficial, physical exercise must be interesting. Physiologists and writers on education have given the weight of their testimony to this opinion, and it is quite difficult to convince many persons at the present day that the value of exercise is not solely dependent upon its being made pleasing and attractive in itself.

If a walk, run, game of ball, or system of gymnastic training, does not accord with

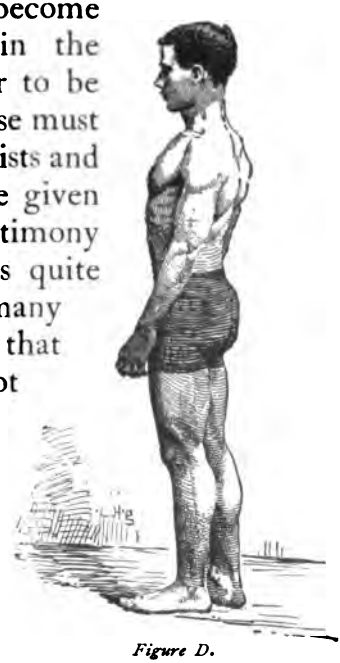

Figure D.

our inclinations, we are likely to enter into it with less spirit, and consequently to reap less benefit. But let it be understood that exercise itself is beneficial, however disagreeable or distasteful. If the effort is made, the physiological effects of exercise are realized. Old tissue is broken down and new tissue demanded to take its place, and in answer to this demand the vital functions are increased. All physical exercises, however pleasant at first, tend to become irksome and distasteful when pursued systematically day after day; but the very energy that one is obliged to put forth in overcoming this distaste is a wholesome discipline. Having recognized the fact that physical exercise is necessary, and that the exercise is best which best meets one's individual needs, a man should pursue it with all the energy that he is capable of throwing into any other duty. By so doing, the training of the will is added to the training of the body, and the lesson learned in abnegation and self-mastery contributes the most important elements to the formation of character. Add to these attainments a correct method of working and a healthy habit of living, and the young man will have had the best kind of preparatory training for the business of life.

The undergoing of present hardship for the sake of future gain is one of the most encouraging features connected with athletic sports and games. That the participants may be in the best physical condition at the day of the contest, they are obliged to undergo a long and arduous course of training, denying themselves luxuries, foregoing pleasures, and holding themselves down to a rigid system of mechanical exercises for an ultimate object, — the winning of a foot-race, boat-race, or a ball-game. If one man in a hundred will practise self-denial, and undergo hardship, in order to win a prize in a fleeting pastime, is it not an insult to the remaining ninety-nine to assume that they have not sufficient morale to make a similar effort in preparing to win the higher prize of life?

After obtaining the measurements of a thousand individuals, ranging from sixteen to thirty years of age, I tabulated them according to age, and sought to obtain the average height, weight, chest-girth, etc., as indicated in the list previously described. The averages thus obtained have been used as a working basis up to the present time. Immediately after the examination of the individual, he was furnished with a book

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or card in which his measurements at the parts specified were compared with those of the average man of the same age. If a measurement fell below the average, the fact would be indicated by the minus sign following it; if the measurement exceeded that of the average, it would be shown by the plus sign.

The interest manifested in physical examinations by the public at large during the last few years, and the adoption of my methods and standards of measurement in several institutions of learning, have enabled me to collect sufficient data to form a more reliable basis for deductions concerning the human figure, male and female, and to offer a more attractive form of expressing these deductions.

Every one who has attempted to draw any conclusion from the measurements of the body must have realized the need of some guide that would show at a glance, not only the relative standing of one individual as compared with another, but also the relation of every part of the individual to every other part. Unless these facts are known, all estimates of the physical ability or capacity of a man are simply matters of opinion. One person may be

above another in height, and below him in weight. The significance of the fact lies in the degree of the difference. Then, again, the same man may be above the normal in one measurement, and below the normal in another. The extent of the variation is the desirable thing to know. In one instance this variation might not exceed the physiological limits; in another instance it might result in a deformity. These differences are but vaguely suggested when expressed in figures; yet it is futile to tell a person that he is above or below the average without indicating the degree, or informing him of its significance.

Figure E.

The object of the chart (see Charts I., II., III.) is to meet this difficulty, and to furnish the youth of both sexes with a laudable incentive to systematic and judicious physical training, by showing them, at a glance, their relation in *size*, *strength*, *symmetry*, and *development* to the normal standard, as deduced from the measurements of ten thousand individuals,

ranging from seventeen to thirty years of age.

The reference tables, of which this chart is a reduced skeleton, are the result of seventeen years' observation. The deductions have been drawn from measurements taken largely from the student class of the community.

The tables for females have been made up from measurements taken by trained assistants at the principal female colleges.

The parts at which the observations were made are indicated by the list at the left side of the chart.

The perpendicular lines divide into classes all of the measurements for each part that were surpassed or unsurpassed by given percentages of the persons examined, as shown by the figures at the top of the chart. The upper number at the top of a perpendicular line shows the per cent that at each part surpassed the class indicated by that line. The lower number shows the per cent that at each part failed to surpass that class. The small per cent that exactly represented that class at any part — varying as it did with the per cent of that class at every other part, and with the per cent of every other class at every part — is not separately taken into account.

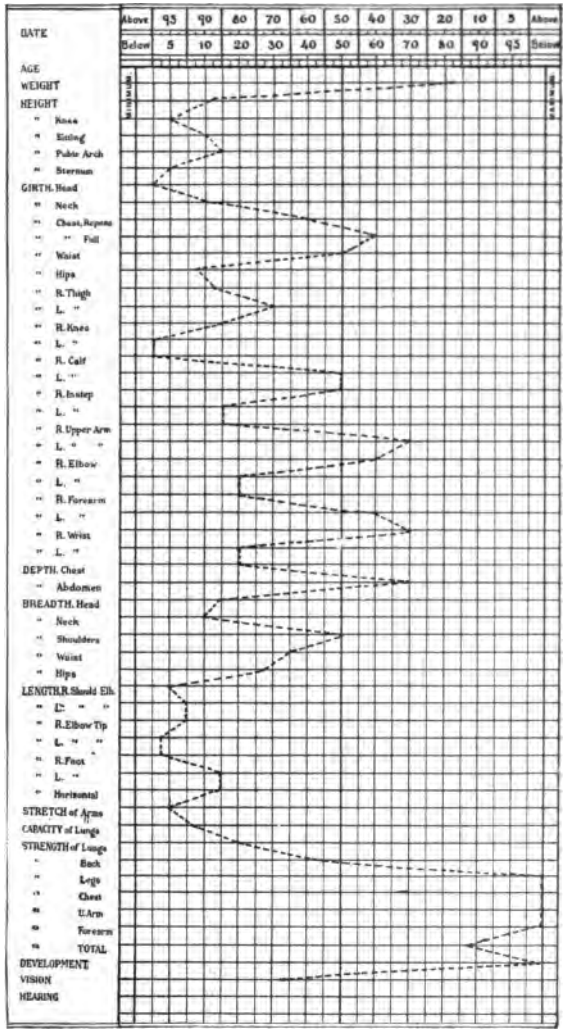


Chart II., plotted from figures C, D, and E.

The reference tables from which this chart is made give all the figures representing the measurements of the fifty-one classes for either sex. These figures are placed where the perpendicular lines intersect the lines leading from the parts measured.

The perpendicular line in the centre of the chart is the normal or typical line; i. e., the line that was represented at each part by a larger per cent of the persons examined than was any other line at any other part.

The class marked "minimum" and the class marked "maximum" were each represented at every part by about one-twentieth of one per cent of all the persons examined.

After a few moments' study, it will readily be seen that the uses of the chart are numerous, showing the relation of the individual to the normal standard, the relation which every part of the individual bears to every other part, and suggesting many other comparisons of interest.

That the unit of measurement should be as small as possible, owing to the tendency of many observers to record a measurement at the nearest whole number, the metric system was adopted.

In computing the normal height, weight, and chest-girth, I used, simply for comparison with and in verification of my own deductions, data compiled from various sources, representing over a million measurements of each of these parts.

Figure F.

The directions for the use of the chart are very simple: To find the standing of an individual in relation to the total number examined, ascertain which one of the perpendicular lines, at its junction with the horizontal line, is intersected by the dotted line indicating his standing. For instance, if his line, at its junction with the horizontal line leading from the weight, intersect the perpendicular line immediately under the figure 20, it would indicate that 80 per cent of all those examined surpassed him in weight, while the complement of this, or 20 per cent, failed to surpass him.

If, however, his line, where it intersects

the line of measurement, fall on the line at the right or left of one of the numbered perpendicular lines, add or subtract 2½ per cent, unless it fall outside of either the figure 10 or 90, in which case but 1¼ per cent should be reckoned.

As a rule, all the measurements of a *small* person fall to the left, and all the measurements of a *large* person fall to the right, of the normal line.

If strong for his age, weight, height, or development, the part of his line that indicates the *strength* will be on the right of the part that indicates the age, weight, or measurement.

Symmetry will be determined by the degree to which his line approaches the perpendicular.

Asymmetry, by the extent to which his line departs from the perpendicular.

To ascertain his *development* as compared with others, observe the intersection of his line with the lines of muscle measurements.

His development, as compared with his *capacity* for development, will be shown by the difference between the muscle measurements and the bone measurements for corresponding parts; as the knee, elbow, wrist, etc.

Figs. A, B, represent a young man of English descent, twenty-three years of age, weight, 149 pounds, and height 5 feet 6 inches.

Upon referring to Chart I.,* where his measurements have been plotted, the relative standing of the young man as compared with the total number examined is readily observed, as well as the relation which every part of the individual bears to every other part.

His line, at its juncture with the horizontal line leading from the age, falls to the right of the perpendicular line immediately under the figure 85. This indicates that 12½ per cent of all those examined surpassed him in years, while the complement of this, or 87½ per cent, failed to surpass him.

The weight falls in the 82½ per cent and the height in the 20 per cent class. The height of knee and pubic arch falls to the left, and the sitting height and height of sternum fall to the right of the line indicating the full stature. This discrepancy indicates that his diminutive

* This chart is obviously limited in its application to those who have been examined according to the system of measurements herein described. More explicit directions will be furnished by the author to any one desiring to pursue the same method.

stature is due to the shortness of the lower extremities, and that the upper part of the legs is too short for the lower part.

The girth of head is above the 85 per cent line, and the girth of the neck and chest above the 97½ per cent line.

The measurements of the waist and hips fall off a little proportionally from those of the chest; but it will be observed that all of the girths are unusually large for the height, indicating a fine muscular development.

The depth of chest and abdomen, and the breadth of the head, neck, waist, and hips, are relatively small; but the breadth of the shoulders approaches very near to the maximum.

The length of the upper arm is a trifle short, as shown by the measurements from the shoulder to the elbow. The forearm and hand are also below the normal in length, but slightly longer in proportion than the upper arm. The left forearm and hand are half a centimetre shorter than the right. This difference is made apparent by the variation in the points denoting the right and left elbow-tips. There is also a discrepancy in the length of the feet.

His horizontal length is about the same

as the height; while the stretch of arms is appreciably greater, reaching, as it does, to the 50 per cent line. This may seem slightly paradoxical, as the length of the forearm and upper arm is below the average, but the increased extension of the arms, when measured horizontally from finger-tip to finger-tip, is due to the great breadth of the shoulders. The capacity and strength of lungs, though fairly good, are not what might be expected from the prominence of the chest measurements. Referring to the accompanying illustrations, however (Figs. A and B, back and side views), we find that the large chest-girth is undoubtedly due to the development of the chest-muscles, and to those of the upper back, while the region below the nipples is somewhat narrow and contracted. It will also be observed that the girth of the chest (full) is proportionately below that of

Figure G.

the chest in repose. This indicates that the power of inflation is less than it ought to be.

The strength of the back accords with the measurements of the waist, and that of the arms and chest with the measurements of these parts; but the strength of the legs is somewhat greater than we should have reason to look for from the development presented at the thighs and knees.

Upon the whole, the strength is in excess of the development, and the condition is favorable.

The weak points are the waist, loins, and abdomen.

Figs. C, D, E, as shown in Chart II., represent a young man of a different type. He is of Irish descent, aged twenty-two years six months, 5 feet 4 inches in height, and weighs 117 pounds.

In this case the weight and height are more nearly in accord, and the weight is a little more uniformly distributed.

The striking peculiarity in his case is the difference between the bone measurements and the muscle measurements for corresponding parts, — as at the knee, elbow, wrist, etc. Are the bones proportionately very small, or the muscles proportionately very large? From a comparison of the

weight and height it will be seen that a large per cent of the bone measurements are in advance of those of the same class on the tables to which this young man evidently belongs. We must conclude, therefore, that the muscular development is in excess of that warranted by the bony framework; and that the size of the bones in the arms and legs has been increased to meet the demands put upon them.

When we compare the total strength as shown by the chart with that of the total development, we find the former greatly in excess. The sum of the measurements would merely entitle the young man to a place in the 30 per cent class, while the total strength-test would entitle him to a place in the 97 per cent class. The falling off in the strength of the forearm is accounted for by an impairment of the muscles of the hand, due to an injury.

In summing up the condition of this individual, we are warranted in saying that he has made the best of himself in point of development. Under more favorable circumstances he might have attained greater stature and weight; but his ancestry and nurture prescribed the limit, and no amount of physical training at this late date can make up the deficiency. By phys-

ical exercise under good conditions the development of the muscles has been lifted above that of the average or typical man, and the strength made greatly to exceed it. A few months' special training might bring the measurement of the thighs to the normal standard, and add a little to the development of other parts; but it would add nothing to the health, permanent strength, or longevity of the individual.

Figs. F, G, H, and Chart III. represent an individual of another type—of American ancestry.

His age is thirty-three years, weight 161 pounds, and height 5 feet 9.7 inches.

Upon referring to the chart, it will be noticed that the most remarkable characteristic of this figure is its approach to perfect symmetry in some parts and its marked divergence from it in others. The weight, which is a trifle heavy for the height, is very uniformly distributed, the only excess being in the region of the chest, hips, and arms.

The relative proportion of the different heights of the body is very nearly true. The only divergence is a slight falling off in the sitting height, which is probably due to the shortness of the neck. The neck and chest are large in circumference.

The excess in the chest-girth may be accounted for by the prominence of the shoulder-blades; for the girth of the waist is consistent with other measurements. The girth of the hips, thighs, and knees indicates the nearest approach to perfect symmetry that it is possible to attain.

The calves are a trifle small, and the insteps somewhat flat; but for these slight deficiencies, and the fact that the upper and lower leg are a few centimetres short, the lower extremities of this individual would be perfect in form.

The upper and fore arms are too large for the body and limbs, and a trifle inconsistent in themselves, the wrist being relatively greater in circumference than the elbows.

The falling off in the depth of the chest is very marked,

Figure H.

dropping, as it does, from the 80 per cent to the 5 per cent class.

This is decidedly the weak point in this individual. It is not apparent in the illustrations, nor would it be detected readily in the individual.

It is attributable to an inward or antero-posterior curve of the spine, between the shoulder-blades, and a depression of the lower part of the sternum, or breast-bone.

There has been considerable compensation, as evidenced by the size of the chest and the lateral prominence of the ribs; but it will be observed that the breathing capacity, although higher than we would expect from the depth of the chest, is still lower than it should be.

The depth of the abdomen falls in the 80 per cent class, as do nearly all the breadths and lengths, the only exception being the trifling deficiency in the breadth of head and the slight excess in the breadth of hips.

In most persons the horizontal length is about one-half of an inch greater than the height. This is undoubtedly due to the straightening of the spine and the relaxing of the cartilages while in the horizontal position. In this case the spine is comparatively straight, so that little differ-

ence is shown between the standing and horizontal length.

The strength-tests in this case, as in the others, approach near to the maximum class.

Upon glancing over the chart as a whole, it will be readily seen that the normal position of this individual is in the 80 per cent class. Nearly all of the bone measurements which are not readily changed in adults fall on the 80 per cent line, while those of the soft parts which are more easily affected fall above this line. To bring the depth of the chest up to this standard by natural processes, although impossible now, would have been a simple matter in early youth. With this exception, the individual just considered could so develop himself by a judicious course of exercise as to approach very near to perfect symmetry.

In this case the dotted line on the chart, indicating the actual and relative standing of the individual at all the parts considered, would be perpendicular. This is the grand object to be attained. The straight line is the physical sign of health and longevity, of perfect structure and harmony of function, and a symmetrical development of the whole body.

The weight must not be too great, or

the stature too short or tall; the limbs too massive for the body, or the body too heavy for the limbs; the head too large or too small, or the neck too short or too long and slender. A small, well-made engine, with all parts adjusted, will do more work than a larger one with parts loosely constructed and a great disproportion between the important members. So a small man, compactly built, with symmetrical proportions and a well-balanced organism, can accomplish more than a larger man less solidly made, with all parts wanting in symmetry and shapeliness. This law of adaptation and harmonious adjustment of parts prevails throughout the greater portion of the animal kingdom.

Among the civilized portion of the human race it is controverted by social laws that tend to foster an inharmonious development. The division of labor, for instance, has made it possible for a man to earn a livelihood and to maintain a footing in the world by the use of very few muscles and faculties. Under such circumstances the large head and massive shoulders and chest are not necessarily accompanied by a broad, substantial waist and pelvis and well-developed lower extremities. It is true that the waist and

legs would have to bear the burden of the weight above if the individual engaged in any kind of physical activity in an upright position; but a person with his weight so unequally distributed would find it very irksome to walk or run, and would naturally avail himself of all the modern conveniences for locomotion. In choosing his life's work, the chances are that he would gravitate into some sedentary occupation in which he could render an equivalent service to any who were willing to do his back and leg work for him. Had he been advised to enter a gymnasium or join an athletic club for the purpose of improving his physical condition, he would probably have selected that exercise from which he could derive the greatest amount of pleasure with the least amount of effort. This would be something to call into play the muscles that were already strong. The result of this inharmonious development would be a further modification of structure, which would eventually throw the remaining organisms out of gear, and constitute a greater or less tendency to disease.

"Cultivate both mind and body along the line of the least resistance."

"Study yourselves; and most of all note

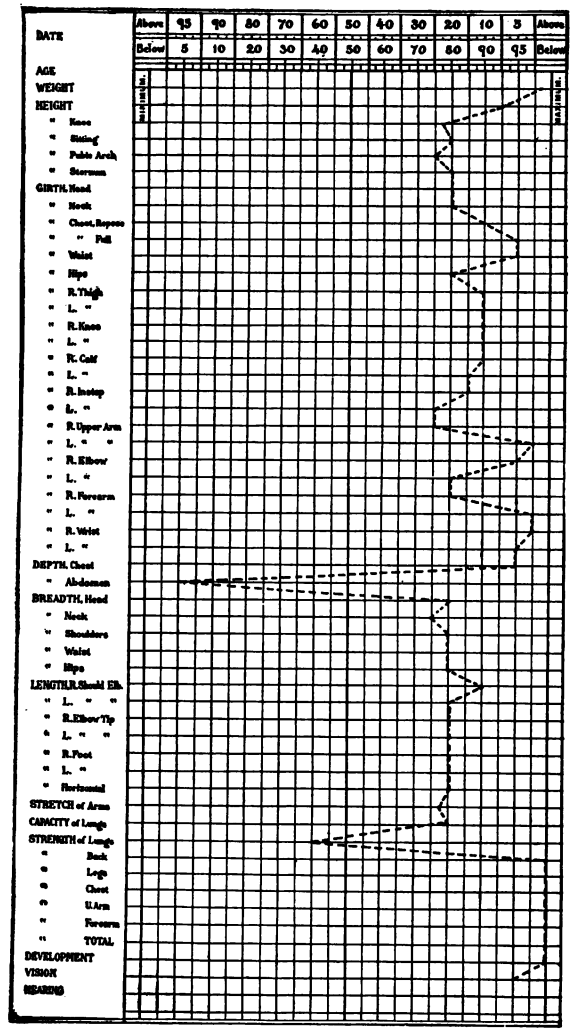


Chart III., plotted from figures F, G, and H.

well wherein kind nature meant you to excel."

These are the sentiments that are shaping the tendencies of the age, and moulding our systems of mental and physical education. In neither case are we looking for improvement in blood and tissue, or for the promotion of organic perfection. The leading object is to achieve immediate success in social aims and distinctions; and a false method is taken of attaining even this. In the effort the welfare of both body and mind is frequently jeopardized, and the foundation for vigorous health undermined.

Nowhere are these tendencies to degeneration more apparent than in the radical changes that take place in the physique through impaired nutrition. These changes can readily be observed by comparing the measurements of those in feeble condition with the typical or normal standard as shown by the chart. This comparison need not be limited to individuals; for it is fully as applicable to schools, clubs, classes, or communities.

While the primary object of the chart is to offer the youth of the land an incentive to proper physical training, and to place in the hands of instructors a key to the strong and weak points of their pupils, the author

hopes, as the data from different sources accumulate, to show the anthropologist, the naturalist, the physician, the surgeon, the artist, and the sculptor, the importance of the tables in the pursuit of their respective professions.

To parents, in guiding the growth and development of their children; to teachers, in watching the effects of study and local conditions upon the health of their pupils; to superintendents of shops, mills, and factories; and to those who have charge of prisons, asylums, and penitentiaries, a knowledge of the typical proportions of the body are indispensable to the proper performance of their duties. To the sociologist and statesman, in tracing the influence of occupation and of town and city life upon the health and strength of a people; to the civil-service examiner, in selecting those best qualified to serve in certain capacities; to the life-insurance examiner, in deciding what risks to accept, etc., a thorough acquaintance with the physical signs of health and approaching disease is of the greatest importance.

In one or two subsequent papers I hope to show the influence of systematic training upon the growth and development of the young, to point out by means of the

chart the physical characteristics of distinguished athletes, to show the influence of the higher education upon the physical development of women, and to compare the proportions of the human figure, according to the canons of art, with those determined by anthropometry.

PHYSICAL CHARACTERISTICS OF THE ATHLETE

By D. A. Sargent, M.D.

Figure 1. (*See description on page* 53.)

IN spite of their objectionable tendencies, the beneficial effects of athletic sports upon the development of the physique are evident. The nature of this development is governed largely by the constitutional bias of the individual, the sport in

which he is engaged, and the time devoted to it.

There is, however, a general development which distinguishes the athletic from the non-athletic class. The tracings given in Chart I.* (p. 54) were made from the measurements of twenty-three hundred Harvard students, of whom seventeen hundred had never practised athletics systematically, while six hundred had been active members of college athletic organizations from one to four years. Many of the former class, however, were accustomed to some form of physical exercise, and the athletic career of many in the second class was limited to a single season.

It may be said, also, that men are often selected for athletics on account of their height and weight, so that the increased size exhibited in such cases cannot always be attributed to the practice of athletic exercises. The chances are, however, that every member of a college team has had more or less previous experience in athletics.

Knowing, as we do, the influence of physical activity upon the development

* In order to understand the construction of the charts used in this article, see preceding chapter, "The Physical Proportions of the Typical Man." It should also be noted that the records herein cited all date to 1887 only.

of the individual, it is fair to presume that a like influence will be exerted on the development of a class. The nature of this development may be found by referring to the heavy lines on the chart. Supposing the fifty per cent line to represent the mean measurements of the non-athletic class, the heavy line at the right of the fifty per cent line will then indicate the mean relative

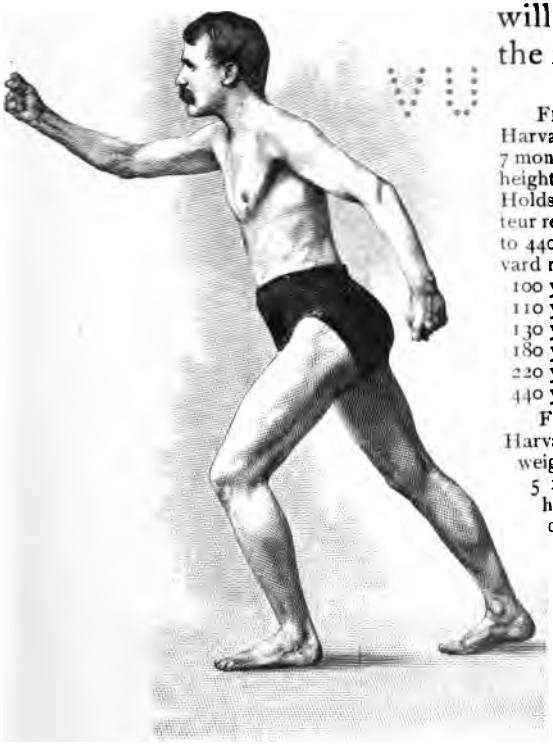


Figure 2.

FIGURE 1. — B ——, Harvard, '86; age, 23 years, 7 months; weight, 140 lbs.; height, 5 feet, 10.9 inches. Holds nearly all the amateur records from 100 yards to 440 yards, and the Harvard record for ½ mile:
100 yards, 10 seconds;
110 yards, 11⅕ seconds;
130 yards, 13 seconds;
180 yards, 18 seconds;
220 yards, 22 seconds;
440 yards, 47¾ seconds.

FIGURE 2. — W ——, Harvard, '82; age, 27 years; weight, 125.7 lbs.; height, 5 feet, 9.7 inches. He holds the best American and college record for 100 yards in 10 seconds. In justice to Mr. W—— it should be said that he consented to have his measurements and photograph taken at a time when he was not in running condition.

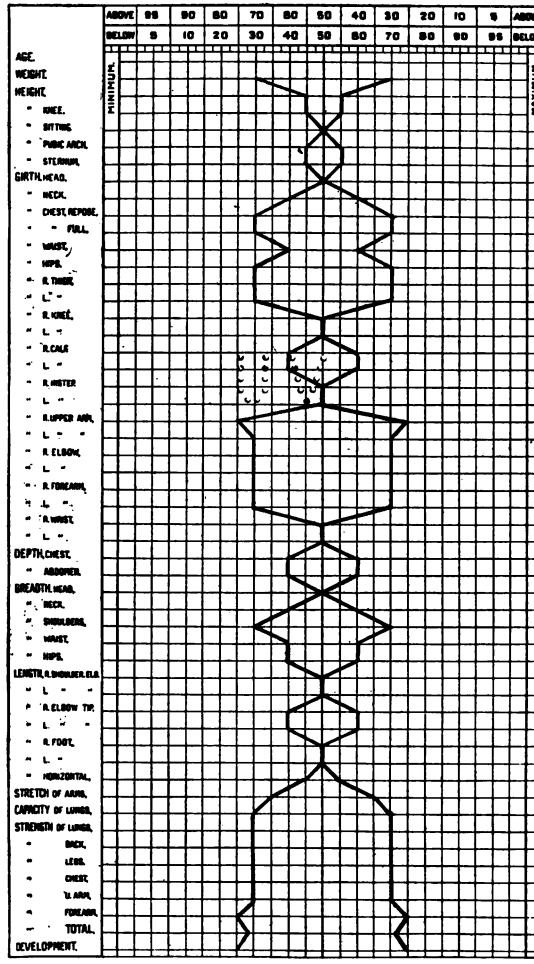


Chart I., showing the comparative measurements of the athletic and non-athletic classes.

standing of the athletic class. On the other hand, let the fifty per cent line represent the mean measurements of the athletic class, and the mean measurements of the non-athletic class will be represented by the heavy line at the left of the fifty per cent line. The chart as a whole seems to indicate that the first and most marked changes produced upon the physique by the practice of athletics are shown in the weight, girth of chest, hips, thighs, and arms, in breadth of shoulders, and in the increased strength of all

Figure 3.

FIGURE 3. — B——, Harvard, '87; age, 21 years, 7 months; weight, 141 lbs.; height, 5 feet, 11.9 inches. Holds the Intercollegiate walking-records from one mile to seven; has practised walking for last four years; 1 mile, 6 minutes, 59½ seconds; 2 miles, 15 minutes, 10½ seconds; 3 miles, 24 minutes, 14⅘ seconds; 7 miles, 58 minutes, 52 seconds.

parts of the body, while the girth of the neck, waist, and calves, the depth of chest and the abdomen, the breadth of neck, waist, and hips, seem to respond more slowly. The total height is slightly increased, through increase in length of the lower extremities; but the sitting height, the girth of head, knees, insteps, wrist, and the length of upper arm and foot, are at first hardly altered.

In the athletic class, the excess in development of the right arm tends to establish the fact that our popular games give more employment to the right arm than to the left. The great showing of strength in the forearm of athletes is probably due to the number of tennis-players, boating and base-ball men that belonged to the class measured. The slight difference between the two classes in the girth of the waist and the calf, and the consequent tendency of the lines to approach at these points, may be easily accounted for. In persons who engage in very active exercise, the girth of the waist will at first diminish, while in persons of less active habit the size of the waist increases. The muscles of the lower leg are generally well developed in the non-athletic class, being the principal muscles brought into play in

walking. The depth of abdomen and breadth of waist would not be likely to show a marked change, for reasons already given. The depth of chest and breadth of hips, being principally bone measurements, are slow to respond to exercise. The similarity in the two classes between the mean girth of head, knee, instep, and wrist, and the length of foot, may perhaps be accounted for by the smallness of the athletic as compared with the non-athletic class.

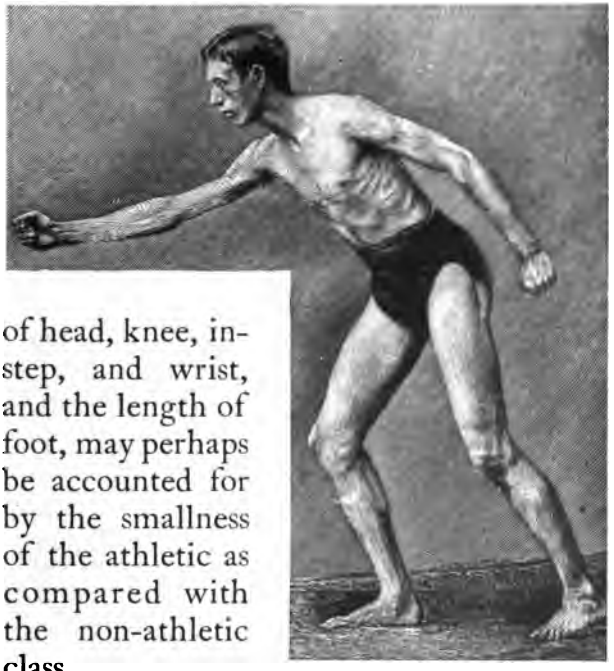
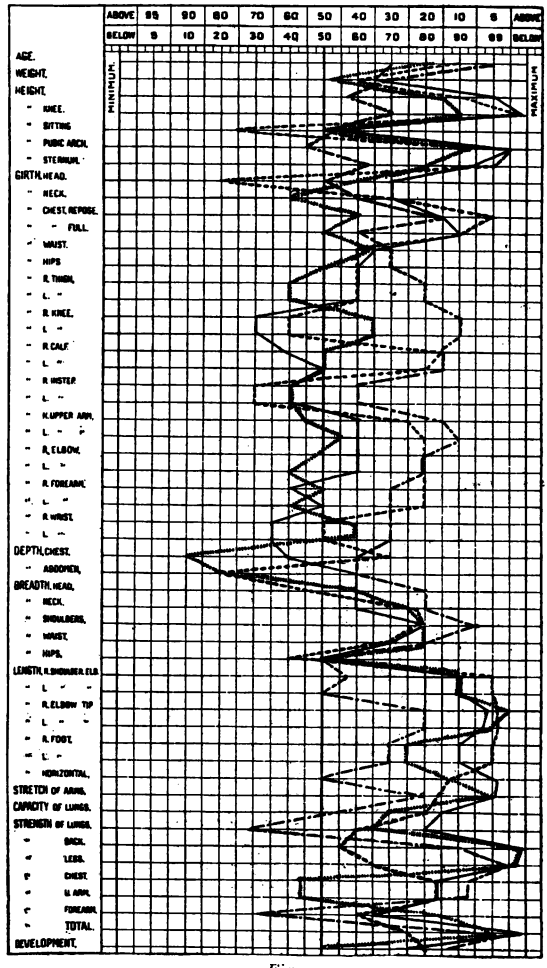


Figure 4.

FIGURE 4. — W——, Harvard Law School; age, 22 years, 4 months; weight, 136 lbs.; height, 5 feet, 10.3 inches. Holds no records, but has won the quarter-mile race in the Intercollegiate sports for two years, and he is a fast runner for all distances between one hundred and four hundred and forty yards.



Figs. 4. 3. 1. 2.

Chart II., plotted from Figs. 1, 2, 3, *and* 4.

The most significant fact in connection with this diagram is that it shows, in certain directions, the uplifting of a class. The data collected are not sufficient to lead to any satisfactory conclusions as to the trustworthiness of the diagram here plotted. The addition of a few more rowing men, or the subtraction of a few base-ball men, or, in fact, a change in the relative numbers of any of the so-called specialists, might have altered the result.

The improvement of the physique and strength in certain directions is indicated by the strength-tests, and by the increase in weight, height, chest-girth, etc. How far this development can be attributed to athletics, and how far to gymnastic training, remains an open question, as work on the water and in the field is supplemented by a few months' practice in the gymnasium.

What the gymnasium is doing for the strength and vigor of the masses in some of our institutions of learning may be inferred from a single illustration taken from the records at Harvard University.

In the year 1880, seven hundred and seventy-six men were physically examined. The strongest man out of this number showed in strength of lungs, back, legs, chest, and arms, as indicated on the chart,

a grand total of 675.2. At the close of the summer term of the present year (1887), the highest strength-test recorded was 1272.8, and there were over two hundred men in college whose total strength-test surpassed the highest test of 1880. This general gymnasium work is therefore reducing the one-sided development once so common with athletic specialists.

It must not be forgotten, however, that there is a development peculiar to the runner, jumper, wrestler, oarsman, gymnast, ball-player, heavy-lifter, etc.; and any one familiar with athletics at the present day can easily recognize one of these specialists. The same training that produced those matchless specimens of human development embodied in the statues of the Gladiator, the Athlete, Hercules, Apollo, and Mercury of old, would produce the same results under similar circumstances at the present time.

With every kind of physical exercise, the qualities at first required are the qualities at length developed. Speed and endurance are required of the runner, and these are the qualities that come to him by practice. In a like manner, skill and activity come to the gymnast and ball-player; and strength and stability to the

oarsman and weight-thrower. Most of these qualities are accompanied by physical characteristics. If it were not for the recognized tendency of certain exercises to produce certain results, it would be impossible to prescribe special work for individual cases. All men, however, who practise athletics for the same length of time, and under similar conditions, do not attain identical results in their physical proportions, or the same degree of success in their athletic achievements.

Figure 5, a.

In order to illustrate some of the distinguishing features that characterize the development of

FIGURE 5, *a* and *b*. — D——, Harvard, '90; age, 21 years; weight, 142⅓ lbs.; height, 5 feet, 8½ inches. Holds the 3 mile Intercollegiate record of 16 minutes, 5⅘ seconds; has raced but one season, but has practised much in the gymnasium, and ran long distances in "Hare and Hounds" races before coming to college.

successful athletes, I have selected representative members of the different athletic organizations in the universities of Yale and Harvard, a few of whom distinguished themselves, within the last two years, by breaking all previous college records for certain events. The photographs of these men, in spite of their dissimilarity, show us certain characteristics common to certain figures, and marked peculiarities of another kind will accompany others. Some of these characteristics are not readily detected by the eye, but appear distinctly in the charts (see Fig. 1, p. 51; Chart II., p. 58). Sixty per cent of the ten thousand examined failed to surpass this young man in weight; while ninety per cent fell short of him in stature, and ninety-eight and three-fourths per cent in height of knee. The sitting height drops back to the twenty-five per cent class, while the height of the pubic arch, which gives us the length of the thigh, is very near the ninety-seven and a half per cent line. The position of the sternum would indicate that the neck and head were a little short, thus adding something to the relative length of the short body. In glancing down the line, it will be observed that the girth of most of the bone measurements,

and the breadth of the head and hips, are below the mean. The chest is deep and full, standing almost as high proportionally as the length of the lower limbs. The waist, though small for the weight and height, is above the average. The calves are large, and the arms well developed, but the thighs are deficient in girth, and do not compare favorably with the other muscle measurements. The arms and feet are long for the girth of the bones and muscles, but are in harmony with the length of the leg and thigh. The capacity of the lungs is very good, and the strength of the chest and arms is in keeping with the measurements of these parts.

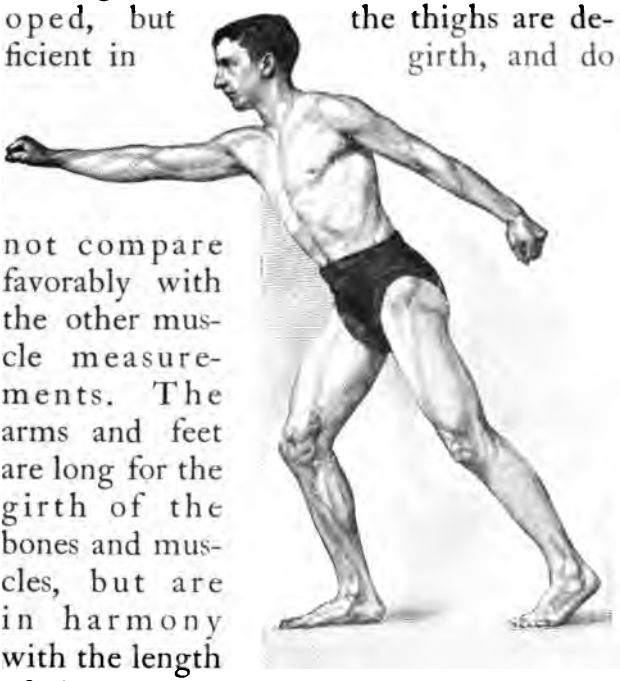


Figure 5, b. (*See description, page 61.*)

The strength of the back, legs, and forearm are deficient, and the total strength is small for the total development.

In looking at the chart as a whole, the striking points are the shortness of the body as compared with the total height, the great length of limbs, the large and deep chest, the well-developed calves and proportionally small thighs. To these points might be added the smallness of the bones as measured by their girth and diameter. A person familiar with zoölogy and comparative anatomy, in selecting an animal for speed, would unhesitatingly choose one similarly constituted; for many of the points necessary to the development of speed in animals are equally essential in man. These, in a word, are the qualities possessed by the subject of the chart just described, who, though not a professional runner, has made the fastest time for certain distances that has as yet been recorded. That all the qualifications possessed by the subject must necessarily be possessed in the same degree by all runners who would equal his performances would be an idle statement. One might compensate for great length of limb by a greater development of muscle, or for want of chest-capacity by a large supply of nervous

energy, etc. We feel prepared, however, to maintain that relatively long limbs with a short body, full chest, and small bones, will characterize the typical short-distance runner wherever he may be found. Short races (100, 220, and 440 yds.) are very often won by a few inches, and the value of an inch or two in a runner's stride is of the greatest importance; for, other qualifications being equal, this man is bound to be first at the goal.

Figure 6, a.

The small girth of the legs of runners

FIGURE 6, *a* and *b*. — H——, Yale, '90; age, 18 years, 10 months; weight, 150 lbs.; height, 5 feet, 7.7 inches. Holds the Intercollegiate record for 1 mile in 4 minutes, 36⅘ seconds, and the College record for two miles in 10 minutes, 7 seconds.

is often mystifying. From the girth of a muscle we get a correct idea of its volume or transverse diameters, but learn little of its length and the extent of its contractile fibres. Whereas, it is the length of the muscle, and not the thickness, that is of significance to short-distance runners. Given the physiological fact that a muscle can contract about one-third of its length, it will readily be seen that the longer the muscle the greater will be the movement of the part to which it is attached. To the runner the desired movement is in the elevation of the thigh and the extension and flexion of the leg and foot. An instantaneous photograph of sprint-runners shows that the range in the movement of the limbs is very ex-

Figure 6, b.
(See description on preceding page.)

tensive — the stride of a fast walker being from four to six feet, and that of a fast runner from six to eight feet. If the stature is short, it is necessary for the runner to get a greater elevation from the ground at each step in order to maintain a long stride. When this is done a relatively long lower leg is of the greatest advantage. This fact is admirably brought out in the case of Myers, the professional runner. With a height of 5 feet 7½ inches, which is a little below the mean, or fifty per cent class, he has a length of lower leg which corresponds to a man over 5 feet 10 inches in height, a length of thigh usually found in men of 5 feet 9 inches, while the sitting height is the same as that which makes up the stature of men of 5 feet 4 inches.

Figs. 2 and 4 (pp. 53, 57), Chart II., give the physical proportions of two other runners noted for their speed. Fig. 3 (p. 55), with the same chart, represents a walker of some prominence. Many of the characteristics that distinguish the short-distance runner are apparent in this case, but it is difficult to affirm that they would be found in other walkers, as there are not sufficient data at hand to establish any satisfactory conclusions.

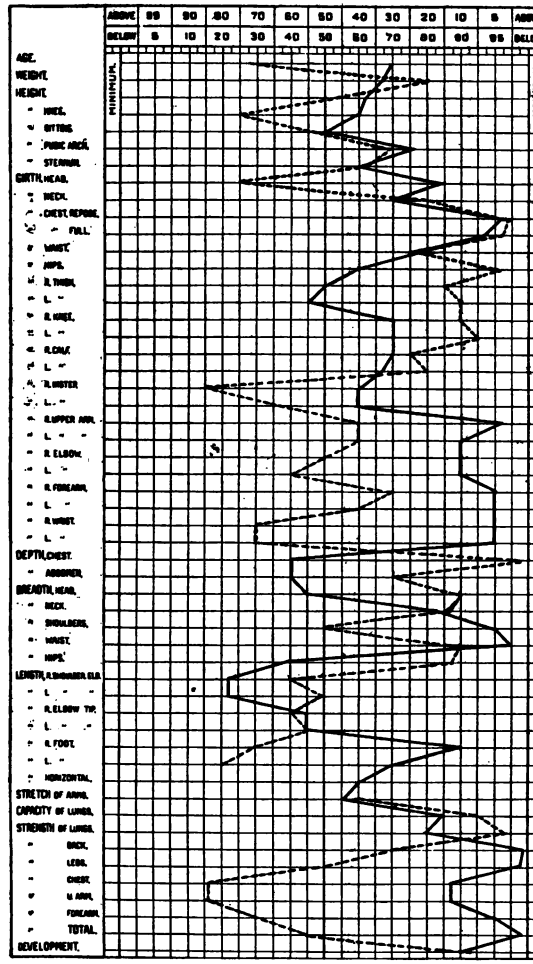


Fig. 5. .....
Fig. 6. .....

Chart III., plotted from Figs. 5 *and* 6.

In Figs. 5, *a*, *b*, and 6, *a*, *b*, (pp. 61–66), Chart III. (p. 68), you will see runners of another type. In neither of these cases do we find so great a relative distance between the height standing and sitting as marked the individuals just considered. In both cases the sitting height is proportionally short, and in one case both the leg and thigh are long for the length of the body. In the other case, however, the thigh is long and the leg is short for the sitting height. It will be noticed that in both figures, as shown by the chart, the thigh is long for the leg. The chest and waist measurements are large when compared with other parts of the body. But the striking characteristic in both cases is the large girth measurement taken below the chest-muscles immediately over the ninth rib. Unfortunately this measurement is not shown in the chart, but the expansion in that region is apparent in both photographs. In the Harvard man (Fig. 5) there is a greater development of the chest-muscles; while the Yale man (Fig. 6) has a larger chest-girth, though the lower border of the pectorals is hardly discernible.

The Harvard man has broad shoulders and large arms, with narrow hips and small

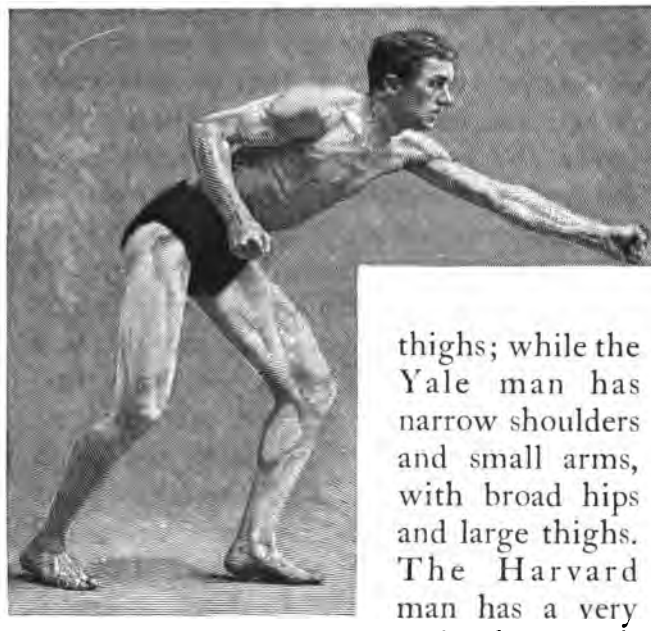


Figure 7.

thighs; while the Yale man has narrow shoulders and small arms, with broad hips and large thighs. The Harvard man has a very wide chest, with great muscular strength and good lung-capacity; while the Yale man has a very deep chest, with less muscular strength, but greater lung-power. As these men are noted in their respective institutions as great-distance runners, we ought to find some characteristics common to both. All that remains, however, is the length of body and thighs and the great girth of chest and the region just above the ninth rib. To these qualifications may be added the splendid heart

and lung power that usually accompanies this peculiar formation of the body. Without this power, great muscular strength in body or limbs cannot be depended upon for long-continued exertions. With a good respiratory and circulatory apparatus, an immense amount of work can be accomplished by comparatively small muscles.

The essential requisites of a long-distance runner, then, are a strong heart and capacious lungs in a broad, deep, and mobile chest. The reason for this will be apparent to those who understand the physiology of exercise. To sustain long-continued exertion, latent energy in the muscles used is necessary, and also a ready means of supplying these muscles with an increased amount of oxygen while in action, and of carrying away the carbonic acid that results from the combustion in the tissues. Hence the necessity of breathing faster while running than while walking; and unless this exchange of gases can be carried on with sufficient rapidity, and in sufficient quantities to meet the demands of the organism under these trying circumstances, there soon comes an end to further muscular activity, though the muscles themselves may be far from exhaustion.

Figs. 7 and 8, *a*, *b* (pages 70–73), and Chart IV. (page 74), represent two young men whose peculiar development characterizes another branch of athletics. Fig. 7 has the college record as a hurdle-jumper. His height falls in the eighty per cent class, his height of knee in the forty per cent class, his sitting height in the seventy per cent, and his pubic arch in the eighty-seven and a half per cent class. When it is known that this man clears his hurdles in regular strides, "bucking" them, as it is termed, the advantage of the short leg, long thigh, and

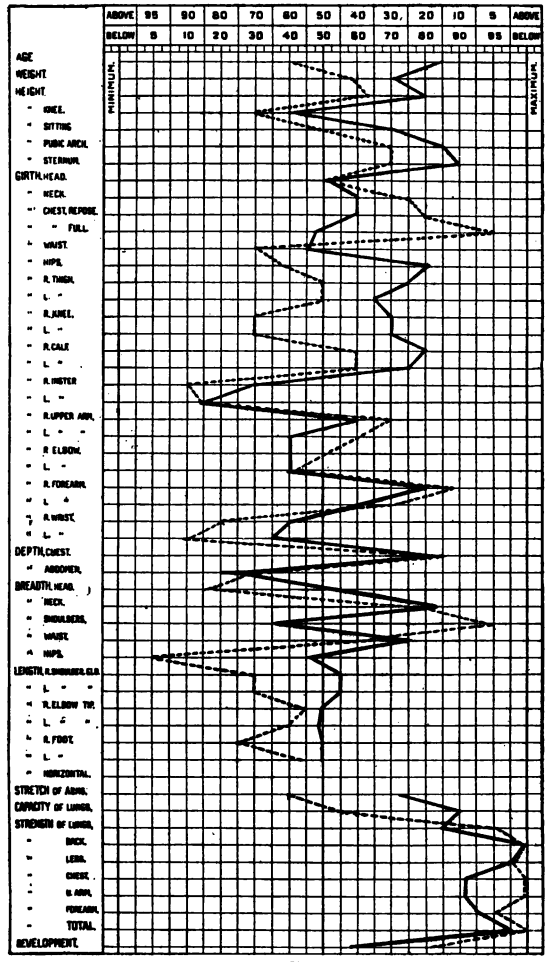
Figure 8, a.

FIGURE 8, *a* and *b*. — S——, Yale, '89; age, 19 years, 1 month; weight, 138 lbs.; height, 5 feet, 8.5 inches. Holds the Intercollegiate record for broad-jumping, 21 feet, 7½ inches; and the Yale record for pole-vaulting, 10 feet, 3½ inches; and 5 feet, 6¾ inches for the running high jump.

comparatively short body is manifest. The chest is small, and the girth of the chest in repose is proportionally larger than the girth of the chest when inflated. This is due to the fact that in most men the difference between the natural and inflated chest is due in part to the muscular development, so admirably exhibited in Fig. 8, *a*, *b*.

Figure 8, *b*.
(*See description, page* 72.)

In Fig. 7, Chart IV., the breathing capacity reaches the ninety per ct. class. Here the pectoral muscles show a comparatively slight development; but the breathing is largely abdominal, and the broad waist and deep chest indicate considerable mobility in the chest and abdominal walls. The gluteal muscles about the hips are well developed, as are also the muscles of the thigh and leg. The development of the arms and shoulders is not so favorable. The difference in favor of the right side of the body is



Figs. 7. 8.

Chart IV., plotted from Figs. 7 and 8.

probably due to the take off (start) of the jump being from the right leg. The outlines of the muscles in this case are remarkably well defined, indicating a fine condition.

In Fig. 8, *a*, *b*, Chart IV., the same peculiarity in the relative length of body, legs, and thighs is not so well marked. The bony framework in this case is considerably smaller, and the muscles are proportionally larger. Here the ability to excel in pole-vaulting rather than in long jumping is apparent. The peculiar development of the arms, chest, and shoulders is characteristic of the gymnast. The shortness of the upper and forearm affords an excellent leverage for the muscles attached to these bones, and this young man could easily excel on the parallel bars, horizontal bar, or rings. For a similar reason the intercollegiate record for pole-vaulting is within his grasp. The development above the hips may enable him to get a lift or elevation from the ground which he cannot obtain in any other way. This advantage, coupled with the relatively long and muscular thigh, the ability to run short distances, and to concentrate the nervous energy of the body into single efforts, gives the power needed.

How little this ability to make violent spasmodic efforts contributes to one's lasting or staying power may be inferred from a glance at the lung-capacity. Here depth of chest is to be attributed largely to muscular development, and the strength of lungs to the power of exhaling with a quick, explosive effort. Contrast the form of the chest and waist in this case (Fig. 8) with that of the long-distance runner from Yale (Fig. 6).

In connection with jumping, the measurements of W. B. Page, who recently represented this country in athletic contests in England, will be interesting. Page has a record of 6 feet 3¼ inches for high jumping. Considering his height (5 feet 6.9 inches), this performance is something phenomenal. We find his weight on the fifty-five per cent line, his height on the forty per cent, knee-height on the twenty per cent, sitting height just above the five per cent, pubic arch on the fifteen per cent, and height of sternum on the fifty-five per cent line. Although very short compared with the sitting height, the body is long compared with the stature, as evidenced by the high position of the sternum. This being proportionally several points above the total height on the chart, it would in-

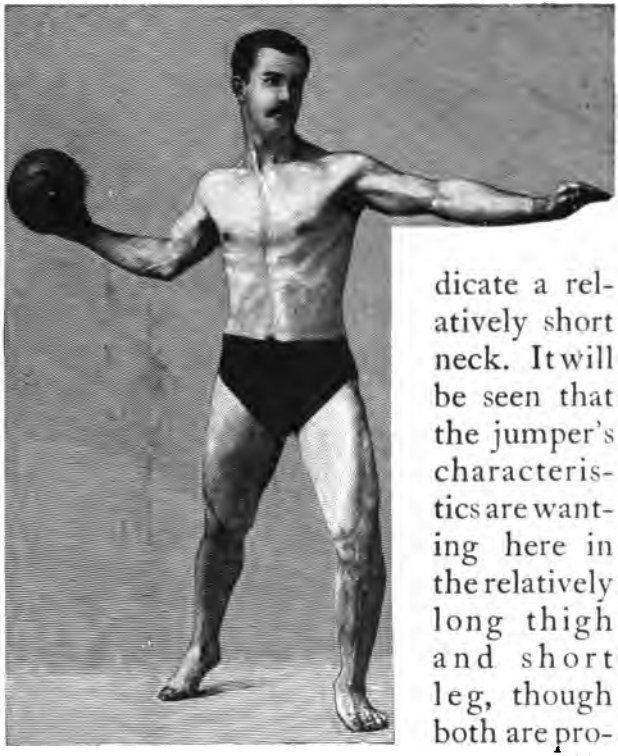


Figure 9.

dicate a relatively short neck. It will be seen that the jumper's characteristics are wanting here in the relatively long thigh and short leg, though both are proportionally long for the body. When we come to consider the other measurements, this apparent disadvantage is to a certain extent accounted for. All the bone measurements are very

FIGURE 9. — B——, Harvard, '87; age, 22 years, 3 months; weight, 172 lbs.; height, 5 feet, 9.3 inches. Pulled the past three years on the Harvard University crew; played centre-rush in the '86 Harvard foot-ball eleven, and has had at least five years of exercise as a rowing man and foot-ball player.

small, and the muscle measurements exceedingly large, the girth of head falling on the five per cent line, while the girth of chest is on the ninety per cent line. The girth of the knee falls on the thirty per cent line, the girth of elbow on the twenty, and the girth of the thigh, calf, arm, and forearm near the eighty per cent line. If the measurements as plotted are correct, this man owes his success in jumping rather to his light, bony framework, short trunk, and superb muscular development than to the relative strength of limb that we find in many jumpers. In a person so constituted nearly every muscle in the body contributes something to the effort in jumping.

Figs. 9, 10, and 11, *a*, *b* (pages 77–81), Chart V. (page 82), introduce us to men prominent in another branch of athletics. In each case the weight falls near the ninety-five per cent class, though the height varies considerably. In all of the tracings, however, it will be noticed that the relative position occupied by the body and limbs on the chart has changed. In the figures previously considered, length of limb predominated; here the body, as shown by the sitting height, is longer proportionally than either the arms or legs.

In one case the height of knee is relatively less than the length of thigh, as shown by the height of the pubic arch; in the other cases the length of the lower leg is relatively in excess of the upper. Here all the bone and muscle measurements are

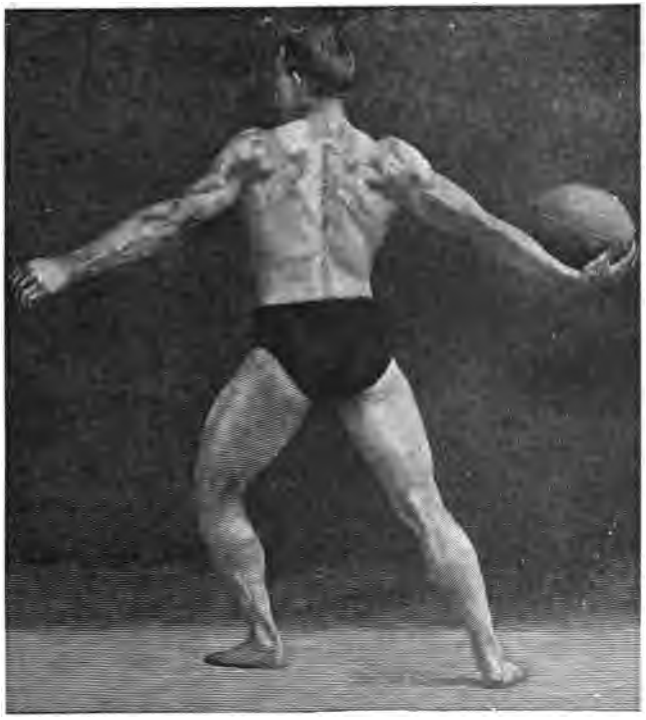


Figure 10.

FIGURE 10. — W——, Yale, '89; age, 23 years, 4 months; weight, 167 lbs.; height, 5 feet, 8.9 inches. Played right guard on Yale's foot-ball eleven for '87, and rowed on the Yale University crew for two years.

large and massive, the girth of head in one case being above the ninety-five, and in another at the eighty-five per cent class, while the girth of the bones of the legs and arms are nearly in the same class as the muscles that act upon them. In each case the girth of the chest reaches the ninety-seven and one-half per cent class, and in two cases the depth of the chest corresponds. In all there is a slight falling off in the girth of the waist. This is due to the fact that the greater number of those who make up the

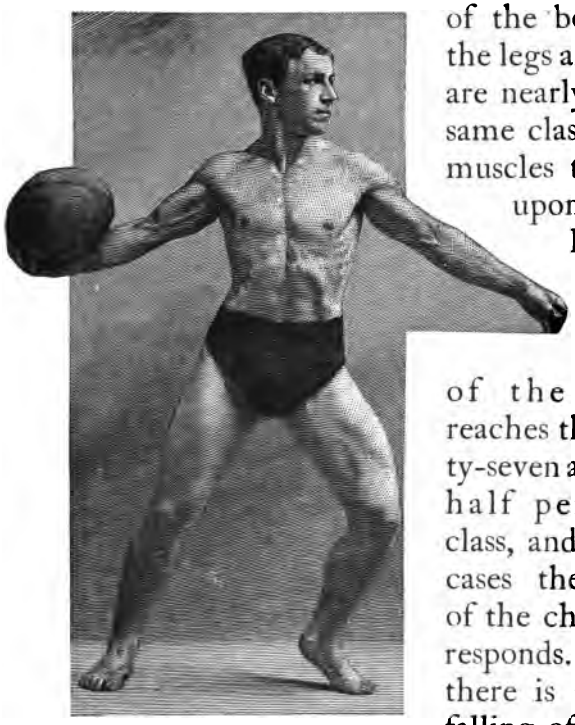


Figure 11, *a*.

FIGURE 11, *a* and *b*. — G——, Yale; age, 19 years, 4 months; weight, 164 lbs.; height, 5 feet, 6.9 inches. Played in the rush-line of Yale's foot-ball team, and has rowed two years on the University crew.

measurements of the classes in this part of the chart owe their extensive girth more to fat than to muscle. In comparison with the athletic class the falling off is not so perceptible; and it will be noticed in these cases that the breadth of waist is larger proportionally than the depth. In two of this group the arms are relatively short, and in each of the group the upper arm is proportionally shorter than the forearm. The lung-capacity in one case is very good, reaching the ninety-five per cent class; but in the other cases, though above the mean, it is not large enough to support the fine muscular development represented. In Fig. 11, *a*, and *b*, the

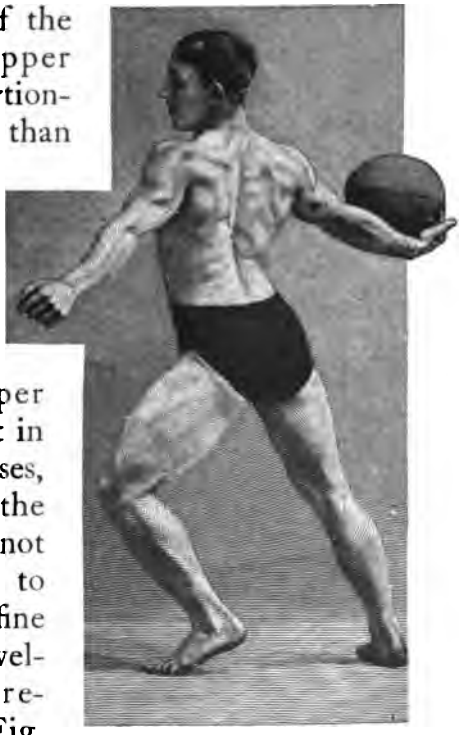
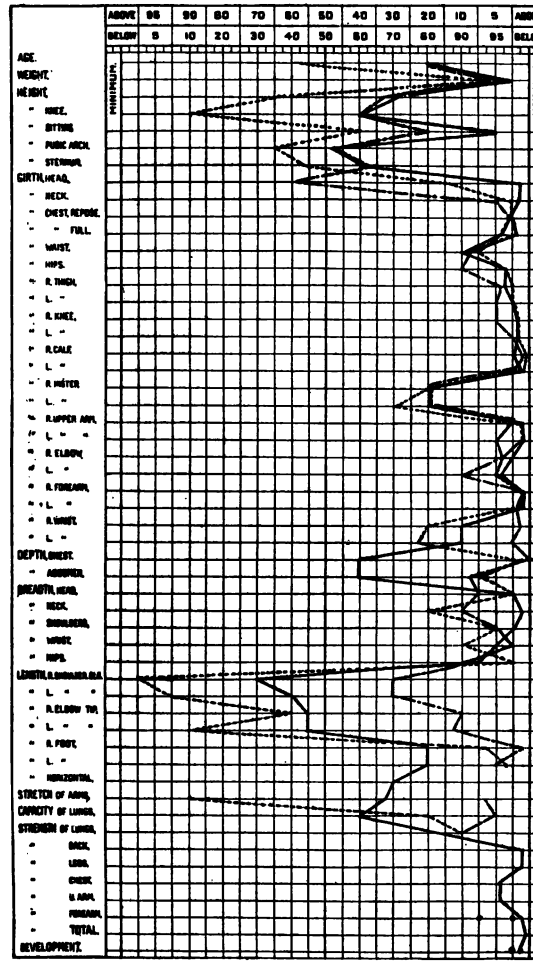


Figure 11, b.
(*See description, page* 80.)



Figs. 9 ——— 11 ····· 10 - - - - -

Chart V., plotted from Figs. 9, 10, *and* 11.

Figs. 12 *and* 13. (*See description, page* 85.)

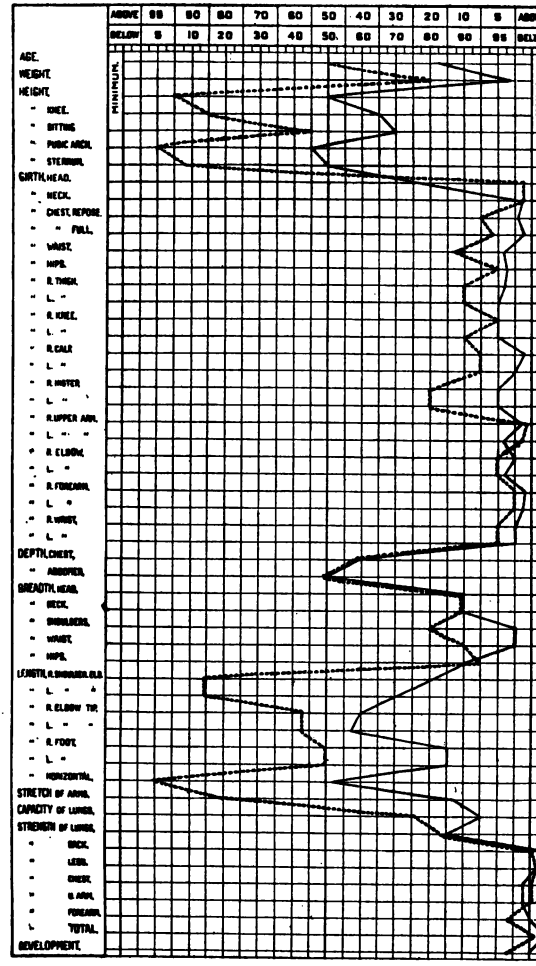
muscle measurements are large for tne age, and consequently threaten to exceed the vital resources. The showing of muscular strength, so far as the tests could be taken, is excellent.

The striking characteristics of the three figures are the long body, short thigh, large bones, full chest, short upper arm, good lung-capacity, and fine muscular development throughout the whole physique. What better illustration could be furnished of the perfect harmony between the form of the muscles and the character of their functions? Here we find the large transverse development of arms and thighs, indicating great strength and short range of action; and the expansive chest and long body, indicating great vital power and extensive range of muscle-movement.

Let us consider, briefly, the branches of athletics which these three men represent, and see the connection between their peculiar development and the sports they are

FIGURE 12. — G——, Harvard, '88; age, 22 years, 10 months; weight, 169 lbs.; height, 5 feet, 7.7 inches. Has the Harvard leg and back lift records of 520 kilos (1146.6 pounds) for the legs, and 370 kilos (815.8 pounds) for the back; he is a hammer-thrower and broad-jumper, and has had four years' general exercise in gymnasium and field sports; is third strongest man at Harvard, having a total strength record of 1139.7.

FIGURE 13. — H——, Harvard, '88; age, 19 years, 10 months; weight, 150 lbs.; height, 5 feet, 4.3 inches. Is the type of a middle-weight wrestler, had three years' practice in general athletics, has a total strength of 1060.3.



Figs. 13, 12.

Chart VI., plotted from Figs. 12 *and* 13.

familiar with. Each has played in the rush-line of a foot-ball team, and has been a member of a university boat-crew. Of all athletic sports, foot-ball is the best game to test a man physically. In the pushing and hauling, the jostling, trampling struggle for supremacy, few muscles of the body are inactive. The legs are almost constantly in motion, and the arms, chest, abdomen, and back get their share of activity; the lameness and soreness in these regions of the body after a fierce contest is due as often to great muscular effort as to collision with opposing rushers. In spite of the accidents attending this game, as at present played, no sport affords better opportunity for vigorous training. Though rowing contributes largely to the development of the back and legs, and slightly to the arms and chest, to the gymnasium and foot-ball training we must attribute much of the superb muscular development of the men just considered.

In rowing, the back takes the greatest portion of the strain, unless the friction of the seat is excessive, in which case a double duty is imposed upon the flexors of the legs. A long stroke being desirable, the advantage of a long body, if sufficiently broad and deep to furnish extensive attach-

ments for the rowing muscles, becomes apparent, while the short thigh and upper arm give power to the muscles that are working these shortened levers from the body. It is only when the stroke is taken principally by the arms or legs that the great length of thigh and upper arm, as compared with the lower leg and forearm, is of service; when otherwise, a greater reach is obtained, without losing any mechanical advantage. These facts are better illustrated in Hanlan, the professional oarsman,

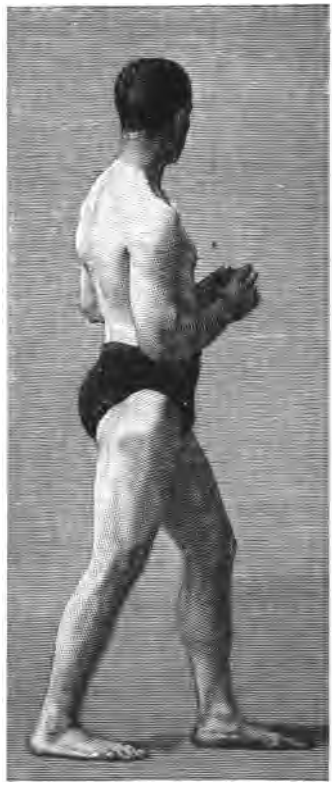


Figure 14.

FIGURE 14. — B——, Harvard Law School; age, 22 years, 6 months; weight, 166 lbs.; height, 5 feet, 8.1 inches. One of Harvard's pitchers on the 'Varsity nine for '87, and half-back on the '86 'Varsity foot-ball eleven; he is second strongest man at Harvard, with a record of 1141.9 for total strength, and has had six years' training in college athletics.

than in the men we are now considering. His total height entitles him to a place in the sixty-five per cent class, and his sitting height in the ninety per cent class, while the height of the knee remains with the thirty, and the pubic arch with the twenty-five per cent class, the most surprising difference being in the relative length of the upper arm and the forearm. Eighty per cent of all those examined surpassed this man in length of upper arm, and

Figure 15, a.

FIGURE 15, *a* and *b*. — P——, Harvard, '87; age, 22 years; weight, 164½ lbs.; height, 5 feet, 10.5 inches. Captain of '87 'Varsity Lacrosse team, and full-back of 'Varsity foot-ball eleven for '86; has had, at least, four years of athletic training.

only twenty-five per cent surpassed him in length of forearm. In view of Hanlan's style of rowing, these measurements are suggestive.

Large bones, which usually accompany large muscles, may result from slow, heavy work, and are indispensable to him who handles great weights. If the bones have large, prominent processes for the attachment of muscles, or the muscles have short tendons and long insertions, great strength is the usual result.

Perhaps no one thing is more important to a successful oarsman than good lung-capacity. In order to relieve the heart and lungs of the embarrassment at first accompanying severe exertion, it is necessary to enlarge the chest and increase its mobility, especially in the region of the eighth, ninth, and tenth ribs. This can be accomplished by the use of light chest-weights, dumb-bells, and running exercises. I am prepared to maintain, also, that rowing, with the use of the sliding-seat, is one of the best exercises for enlarging the chest, and I believe that conclusions of Maclaren and others to the contrary were formed before the introduction of the sliding-seat, as the evidence is indisputable that the girth of the chest is greatly in-

creased by rowing. The use of the sliding-seat brings more muscles into action: there is, in consequence, an increased demand for oxygen, which necessitates a larger chest-cavity; and the effort of nature, by aid of the muscles used in natural and forced respiration, is to produce this result. Nearly all the muscles of the chest, abdomen, and back assist respiration when the exercise is violent and prolonged. Considering that these accessory muscles are contracted and relaxed at least one thousand times a day during a season of vigorous training, we ought to get some result in the shape of increased volume of muscle and enlarged chest-capacity. This would naturally account for the increased girth of chest from rowing.

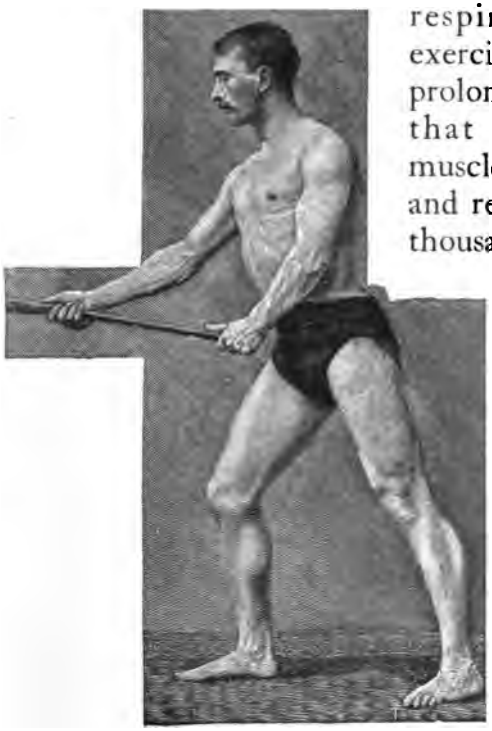


Figure 15, b.
(*See description, page 89.*)

The physical proportions of the two wrestlers, Figs. 12 and 13 (page 83), as shown by the tracings in Chart VI. (page 86), are distinguished from those just described in proportional shortness of stature and in great volume of muscle. In one case the lengths of the arms and legs are very short for the length of the body. In both cases the depth of chest and abdomen is proportionately small, but the width of the waist corresponds more nearly to the other measurements. In the chart-tracings of Fig. 12 we have the nearest approach to symmetry in the girth of body and limbs that has thus far been recorded.

The group of tracings in Chart VII. (page 102), representing Figs. 14, 15, *a*, *b*, and 16, *a*, *b*, *c* (pages 88–99), are in some respects unique. Here we have for the first time some approach to symmetry in the relative heights of different parts of the body. There is no marked divergence in the points indicating the relative length of trunk and lower limbs. In two cases none of the measurements fall below the normal or fifty per cent line, and in one case only thirty per cent of them fall below the eighty per cent line. In Fig. 14 the line of symmetry is very nearly approached in the chest, waist, hips, thighs,

and knees. The upper arm, elbow, and forearm, also, are nearly symmetrical, although a trifle large for the lower extremities. The depth of chest and abdomen is a little low, and the lung-capacity is deficient; but nearly all the strength-tests are in the region of the maximum.

Fig. 16, *a*, *b*, *c*, is pleasing; and the harmonic poise and beautiful outlines it illustrates serve to show, also, that a man may depart from the normal standard in several parts and yet retain all the appearance of grace and symmetry. In girth of neck this man approaches within two and one-half per cent of the maximum, while in length of upper arm he falls to within two and a half per cent of the minimum. The waist and neck are very broad for the hips and shoulders, and the instep is apparently low, as the result, probably, of a high arch and narrow foot. In this, as in the preceding figure, the depth of chest is somewhat low, and the lung-capacity at the normal. The strength-tests would probably have exceeded the muscle measurements, owing to the shortness of the arms and legs, and have reached the region of the maximum.

These two men are base-ball players of some prominence. As a base-ball pitcher

offers the batters from two hundred to three hundred balls a game, superior development of the right arm and shoulder is the natural result, although the gymnasium training counteracts in a measure this one-sided tendency. Any one familiar with the modern style of delivering the ball, the number of times the pitcher turns around to perplex the batter, or watch the bases, will know that the neck and waist are called upon for a large share of work, and must be developed correspondingly. Where the arms are short, the muscles around the waist and body are used more in pitching. As the leverage in the former case is more favorable than in the latter, this advantage should naturally add to the endurance of the pitcher so favored. In striking, the muscles of the arms, chest, abdomen, and back are brought more or less vigorously into action. In running bases, the legs and arms do the work, as in "sprinting;" but the lungs are not brought into full play, as in running long distances, and the lung-capacity is but slightly increased. The other developments peculiar to base-ball players will, of course, depend largely upon the positions they occupy.

In Fig. 15, *a*, *b*, we have a typical lacrosse-player. In this game the muscles

of the arms, chest, back, abdomen, and legs are called upon; and the heart and lungs are often kept in a state of prolonged activity. As a means of general development, few games can be compared with lacrosse. It has many of the advantages of football, without its element of danger, although the method of using the stick which has come into practice within the last few years threatens to deprive lacrosse of this distinction. In the figure under consideration, we see the result of a harmonious development in all directions. No one point stands out prominently. The

Figure 16, *a*.

FIGURE 16, *a*, *b*, and *c*. — S——, Yale, '88; age, 24 years, 9 months; weight, 149 lbs.; height, 5 feet, 5.4 inches. Has pitched on the Yale base-ball nine for two years, and had considerable experience in ball-playing before entering college.

extent of divergence on the chart is limited to a very few lines, and the approach to symmetry is apparent. The length measurements of the upper arm and forearm fall exactly on the normal line, and both are perfectly symmetrical as related to each other and to the right and left sides. When compared with other parts of the body, however, it will be seen that the arms are short, illustrating a point in connection with the chart that may be of interest. In the original table, the fifty per cent line represents the value of the measurements for each part at which the greatest number of observations occurred. For example, if out of any given number of men, collected from all parts of the globe, the largest group was 5 feet 5¼ inches in height, this measurement would naturally fall upon the central line of a chart composed of these records, and so would the measurements of the other parts common to the greatest number. If any one man could be found, all of whose measurements corresponded to those on the central line in the table, he would be termed a *mean* or typical man; i.e., he would represent the type most common to the human race.*

* "The conclusions arrived at up to the present time, by the most eminent investigators in this particular branch of science (anthropometry), may be summarily stated as follows: —

The height, weight, and physical proportions of such a man are those that all men who have attained their growth would possess but for the influence of climate, heredity, nurture, and a multitude of accidental causes that have assisted or interfered with nature's plan of development. These causes, operating on a grand scale, have given us the forms

Figure 16, *b.*
(*See description, page* 95.)

" 1. There is a perfect form or type of man, and the tendency of the race is to attain this type.

" 2. The order of growth is regular toward this type.

" 3. The variations from this type follow a definite law, the law of accidental causes.

" 4. The line formed by these variations, when arranged in groups, receding on either side of their mean, is the curve well known to mathematicians as the binomial; it was first applied by Newton and Pascal to questions of astronomy and physics, but it is applicable to all the qualities of man which can be represented by numbers.

" 5. The more numerous the data obtained by actual measurements, supposing them to be made with reasonable care and without bias, the more nearly accurate is the mean result, and the more closely does it correspond with that obtained by calculation." — *Statistics, Medical and Anthropological, of the Provost-Marshal-General's Bureau, Washington, D.C.*

and proportions that characterize different races.

We see their influence also upon people of the same race, family, and kindred. It is manifest that a chart made up from measurements of ten thousand African Bushmen, whose average height is 4 feet 4.78 inches, would have a different mean from a chart composed of the measurements of the same number of Englishmen or Americans, whose average height is nearer 5 feet 7¾ inches. For the same reason a chart composed of the measurements of a picked class in the community would represent a higher mean than a chart made up from a class less favorably situated.

Now, the same laws that govern the growth and development of the body in races and different classes in the community are just as apparent in the development of the class itself. The general chart at present under consideration was made up largely from college students, as stated in the preceding article. There were about as many men above the mean as below it in the measurements of every part taken. In some individual cases all the measurements were above the mean, in other cases all were below, while others ranged extensively in both directions. To assume

that the man whose measurements all come on the mean normal or typical line represents the *ideal* type, i.e., the type to pattern after, is to assume that the standing taken by the average man of a class is more worthy of imitation than that taken by those nearer the top. If this were true, we should be obliged to admit that the lengths of the upper arm and forearm as shown in Chart VII. to come exactly on the mean line were the only normal proportions exhibited by this man, and that all the others had exceeded the proper standard. This is not the case. The reverse, however, is true. With a good inheritance to

Figure 16, *c.*
(*See description, page* 95.)

start with, and by dint of systematic exercise and correct habits of living, this young man has worked his way up through the fifty, sixty, seventy, and eighty per cent classes to a position approximately near the ninety per cent class. The measurements on this line may be reasonably considered to define *his* normal proportions, whereas the parts remaining on the so-called normal or typical line are the only ones in which he is defective.

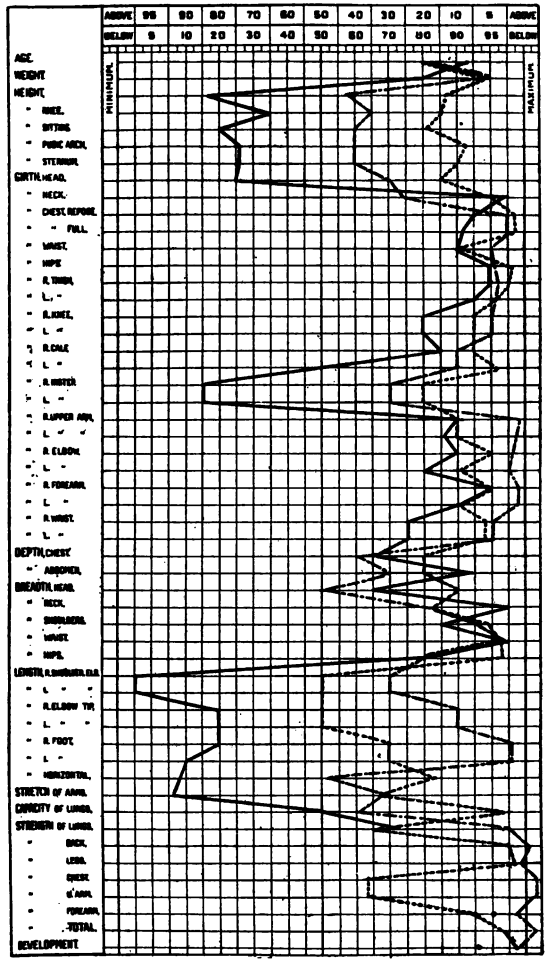
The point, then, which is of the greatest significance is, not to see how many of your measurements come in the centre of the chart, but to first endeavor to *straighten* your own line, wherever it may be, and then carry it forward as near the one hundred per cent line as possible. In other words, endeavor to obtain a symmetrical figure, then strive for a full-orbed and harmonious development of all parts of the body.

By so doing you will help raise the standard of the mean, and assist in determining the exact ratio between the different heights and girths that exists in a fully developed man.

We have seen that excellence in athletics is not incompatible with a fine figure and a superb development. The tendency,

however, of all special exercises is to produce special results. The physical characteristics which we have found peculiar to runners, jumpers, oarsmen, etc., have in a measure been acquired by long and arduous practice in these sports. In many cases the special qualifications that make a man a first-class athlete are gifts of nature. Add to this inheritance the prolonged training that tends to cultivate these special powers to the extreme, and we get sometimes a prodigy, but more often a failure.

It would be of interest to know if an inch added to Myers's legs would have made him a greater runner than an inch added to his sitting height; or an inch added to Hanlan's long body would have made him a greater oarsman than an inch added to his relatively short legs. There is certainly a limit beyond which the development of special parts cannot be carried without interfering with the functions of other parts upon which their ability to act effectually depends. This and many other problems of a similar nature can never be decided until an immense amount of data has been collected, and many experiments have been performed. In the meantime we feel prepared to affirm that



Figs. 16 ——————
15 ·····
14 — · — · —

Chart VII., Plotted from Figs. 14, 15, *and* 16.

mankind would be better served by a more general cultivation of athletics than by the cultivation of specialties to an extreme; that the development of athletes themselves would be more complete, and that they would even realize a greater progress in the pursuit of their specialties, if they participated in a greater range of exercises. The runner would find it to his advantage to practise rowing, and to use the gymnasium for the purpose of cultivating the muscles used in forced respiration. The oarsman would add greatly to his breathing capacity by long-distance running, and acquire dash and vim through foot-ball and lawn tennis. The jumper could add to his agility by frequent trials at short-distance running and occasional spins on the bicycle. The gymnast would be likely to add to the permanency of his development, and improve his constitutional vigor, by indulging more freely in out-of-door sports.

And so on through all the range of specialties. Let the active learn something from the strong, and the strong take lessons from the active, while both acquire the great secret of enduring. When our athletes shall have learned the full value of indirect training, we shall not only have

greater athletic performances, but better specimens of physical manhood.

In conclusion, let it be said, whatever may be the physical qualifications of the athlete, in his achievements he will fall short of success without a well-developed nervous system, and the possession of that almost sublime quality in man, courage. As a means of developing such qualities, added to those of coolness, presence of mind, and the rapid and responsible exercise of judgment under trying circumstances, which are so desirable in the "battle of life," athletics should be kept from degenerating into the bad associations that often accompany professionalism, and be elevated to a high plane by the lovers of manly sport.

GOLF

By H. J. Whigham

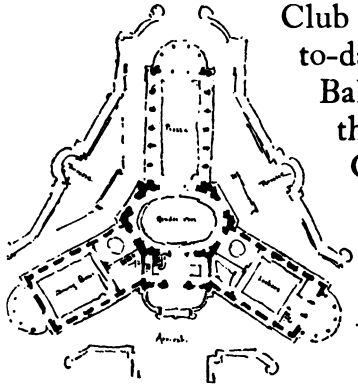
(*Amateur Champion of the United States*, 1896)

ILLUSTRATIONS BY A. B. FROST

Shinnecock Hills Golf Club.

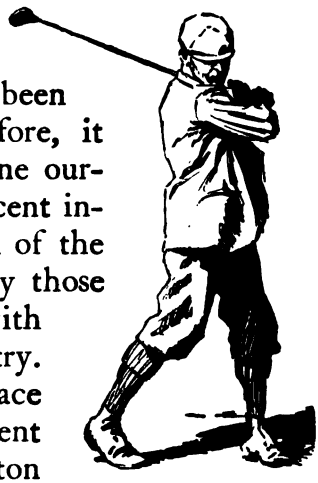
IT is natural that a game which has formed the chief recreation of the Scottish people for several centuries should have by this time acquired a large literature of its own; so much so, that two of the best volumes in the whole domain of sporting history are devoted to this subject. It will be unnecessary and superfluous, therefore, to enter upon a full description of the game's development in the remote past; for are not its annals written in the pages of the Badminton book upon golf, and did not Sir Walter Simpson go back farther yet, and invent a pretty legend to explain the origin of the pastime? All this has been done for us already. It is needless to recount how the popularity of

the game began in the seventeenth century seriously to menace the profession of the soldier and the pursuit of religion; how the great Montrose preferred a friendly contest at Musselburgh to raiding the base Lowlander, or how Charles I. forfeited his crown and his life because he allowed the Irish Rebellion to break out while he was sacrificing his royal duties to indulgence in this ancient sport. More recent passages in history tell the same tale. The one fact of importance which has been related of the predecessor of Queen Victoria on the throne of England is that he was elected captain of the St. Andrews Golf Club; and it is certain to-day that Mr. A. J. Balfour would refuse the premiership of Great Britain if he could by so doing become the amateur golf champion of Scotland and England.



Plan of Newport Golf Club-house.

[The distinctive feature of this Club-house, as shown by the plan, is that it is divided into three parts. One is given over to the dining-room, kitchen, and servants' quarters; another to dressing and locker-rooms; and the third to the social or general club features — the three wings being joined by an elliptical hall — the rendezvous.]



A Clean Miss.

In order, then, to avoid returning over ground that has been so often trodden before, it will be well to confine ourselves to the more recent incidents in the growth of the game, more especially those which have to do with its spread in this country. For even Mr. Horace Hutchinson's excellent work in the Badminton series was contributed before England became thoroughly converted. Nine years ago, at the English universities, not only was the game played by a very small body of undergraduates over the half-inundated cricket-fields during the winter months, but the ignorance displayed by all who did not belong to this devoted band was simply appalling to one who had been born and educated north of the Tweed. The point of view taken by most Englishmen was well expressed when it was proposed about a year later that the members of the team selected to represent Oxford in the inter-university golf match should be allowed the privilege of wearing a "half-blue,"—

the full "blue" being the reward for services in the Rowing Eight, the Cricket Eleven, or foot-ball teams. The president of the "blues" committee was at that time one of the best all-round athletes in Oxford, and he very strongly objected to extending any university recognition to the exponents of a game which, as he put it, did not induce perspiration. In other words, he confirmed the general opinion of outsiders that golf is not an athletic pursuit at all, but merely a mild recreation for old men.

Now, although it is perfectly true that children of ten and octogenarians can trudge round the links and enjoy the fresh air and the mild exercise involved in tapping the ball, it is entirely wrong to suppose that the game, when properly played, does not require the same muscular strength, skill, and endurance which are requisite for preëminence in all of the higher branches of sport. Golf was never intended to be a game for team

Uncertain Arithmetic.

Willie Dunn's Shop at Shinnecock.

matches, and for that reason it is probably right to leave it out of the reckoning in university athletics. On the other hand, we need only look for a moment at the career of the best amateur players in the world to see the truth of the assertion, upon which I should like to lay some stress, that strength, skill, and training are absolutely necessary for success in the royal and ancient game; for if it were really a pastime for old men, women, and children, as so many seem to imagine, or if it were simply a society fad, as it would appear to a large section of the American public who have been unaccustomed in the past to any form of athletics which can be indulged in by a man after he has left col-

lege, then the best players would be drawn indifferently from the ranks of the strong and the weak, the young and the aged. This, however, is not the case. Every prominent golfer whose name comes readily to mind has achieved success in other branches of sport. Mr. F. G. Tait, the amateur champion of Great Britain for 1896, was a fair cricketer at school and a first-rate foot-ball player. He did not go through a university career, and so his prowess on the foot-ball field was not widely known; but he was one of the strongest players at Sandhurst, the training-school for the army, where strong men are rife. His predecessor, Mr. Leslie Balfour-Melville, whose record as a golfer is a long and glorious one, was for years the best all-round athlete in Scotland. He was one of the few cricketers from the North who could ever rank with the English exponents of the game. At school he was one of the most brilliant foot-ball players in the country; his skill at lawn tennis was far above the average; and it may be remarked in passing, that he is a billiard-player of no mean ability; for, curiously enough, accuracy in billiards and golf seem to go together in a great many cases.

Then, again, we are not surprised to find

The Drive.

that Mr. J. E. Laidlay, who is without doubt the most brilliant match player of all the first-class amateurs, was one of the most remarkable school cricketers when he was a boy at Loretto; and so instances might be multiplied. Mr. Horace Hutchinson was a good cricketer in his college

days; Mr. Mure Fergusson, the Blackwells, and Mr. John Ball are all men of great physical strength and muscular activity. The last-named player had the distinction of being the first amateur to win the open championship; and, although there are others who in the last two or three years have met him on even terms, he was for a short time quite unique in the power and accuracy of his play, and it is certain that he could never have reached such perfection if it had not been for the country life which allowed him constant practice and plenty of hard physical exercise.

It may be taken for granted, then, that although a man can play the game as long as he can walk, or even ride round the links on a pony, the real science of golf can only be acquired by men of athletic capacity. To saunter round the eighteen holes on a summer afternoon, with intervals for tobacco and conversation, is one thing. It is another and a very different undertaking to go through a championship tournament, playing thirty-six holes a day, when every drive must be hit hard and clean, every approach must be accurate, every put must be true to a hair's breadth. A foot-ball match is a matter of less than two hours; from the instant the ball is in play the ner-

vous strain is removed, and the constant action requires a sound wind and fleetness of foot, but not the absolute freedom and yet control of the muscles which is requisite for steady driving, nor anything like the strain on the nerves which is kept up from the start to the finish of a close encounter at golf.

Fore!

It was probably an awakening to the fact that golf was, after all, a real branch of athletics that brought about its sudden and extraordinary popularity in England eight or nine years ago. The conversion of the South began when many of the prominent cricketers discarded the bat to take up the golf club. Having for many years dismissed the Scotch game with various disparaging terms, such as "parlor skittles" or "Scotch croquet," they at

length discovered that it only required a single trial to enamour them of this much-despised pastime. Moreover, it became apparent that for those who had left college, and settled down to a regular profession, cricket was a vain and elusive pursuit, making far too strenuous demands upon the time and purse to come within the reach of any but the rich and idle. Golf, on the other hand, could be freely enjoyed by all who were able to spare an afternoon a week. No sooner, therefore, were the floodgates opened than the new waters threatened to inundate the whole field of English sport. The stanchest cricketers were found among the proselytes; lawn tennis became a thing of the past; the crack shots from the midland counties would tarry on the links of St. Andrews late in the year, when the partridges and pheasants were waiting to be killed at home; even the rabid fox-hunter found himself wasting whole days when the frost was out of the ground, chasing the gutta-percha instead of the brush. Heretofore in Scotland an inland links was exceedingly rare; but now they sprang up in every county of Great Britain. Old lawns, on whose immemorial turf it had been reckoned a sin even to walk, were ruthlessly

Golf.

Leg Wrappings.

hacked to pieces by the iron of the golfing tyro; the cattle were robbed of their pasturelands in order that the putting-greens should not be disturbed; and, last but not least, the Sabbath was freely violated by men and women who had never before missed a morning service in church.

Needless to say, this sudden enthusiasm was regarded with supreme distrust by the conservative Scotchman. New elements were introduced into the game which he could least endure. Formerly the only prizes in the year had been the autumn and spring medals at the leading clubs; and these were coveted for glory and not for their intrinsic value, which amounted to less than that of the expense in clubs and balls which it cost to win them. The real game of golf was to be found only in match play; and the counting of scores was regarded with the utmost abhorrence except on those rare occasions, twice in the year, when it was absolutely necessary. The Englishman, however, looked upon the matter in a very different light. Long practice in lawn-tennis tournaments had inured him to the vicious habit of pot-hunting, so that golf for him was a new and unending source of joy. Tournaments and sweepstakes were matters of weekly

occurrence; a system of handicapping was instituted, and the young golfer was chiefly engaged not so much in improving his game as in defeating the vigilance of the green-committee; nor was it at all rare to find a veritable duffer in possession of many valuable trophies, any one of which would have bought up all the medals in the keeping of the best first-class player in Scotland.

It can hardly be wondered, then, that the term "English golfer" became one of reproach upon the Northern courses. The

Temper.

pilgrims from the South were, in fact, a terrible nuisance. They had no respect for the sacred traditions of the game; they appeared on the classic heath of St. Andrews adorned in flaring "blazers," which filled the mind of the orthodox Scot with loathing; they never played a match, but toiled round the links with pencil and card,

Farmhouse formerly used as a Club-house by the Chicago Golf Club.

intent on deceiving themselves into the belief that they were daily lowering their record. A famous old caddie at North Berwick expressed the general feeling of his outspoken class when he pointed to one of these misguided individuals busily engaged with his card on one of the put-

ting-greens, utterly oblivious to the fact that he was delaying the field while he worked in the higher branches of arithmetic, and remarked in a loud tone of contempt to one of his party, "D'ye see yon man? D'ye ken the best club in his set — it's his pencil."

This was only one aspect of the movement, however; and now that the pencilling disease has more or less abated, it is only fair to admit that the new impetus given to the game by its sudden popularity outside of Scotland has been in the long run most beneficial. The competition has, of course, become far greater; and as young athletes have taken up the sport more and more, the standard of excellence has proportionately increased. I am quite willing to believe that "Young Tom" Morris was one of the greatest golfers that ever lived, but I am equally convinced that there were no amateurs in his time who could compare with the players of to-day. The conditions are certainly in our favor.

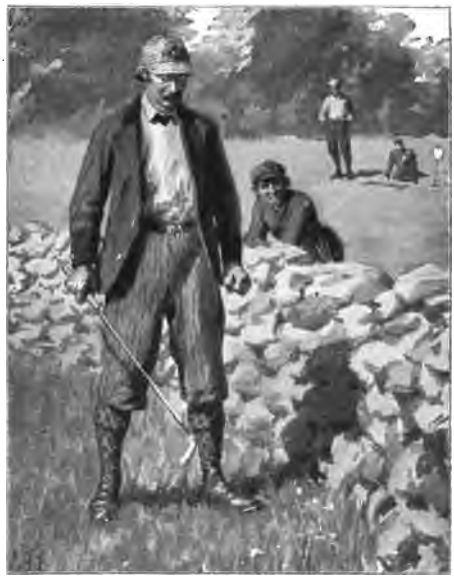
Lost Ball in the Meadow.

Topped.

Not only have the greens become easier, and straight driving less essential, but the implements of war are far more efficacious. The quality of the balls has greatly improved, and the introduction of the "bulger" has revolutionized the art of driving. With the old-fashioned long-headed club it was practically impossible to hit hard with any accuracy, the slightest deviation in aim involving a terrific slice or pull. Nowadays the curve on the face of the club, and the more compact volume of weight make the matter of direction so much easier, that a far greater force can be given to the stroke. Twenty years ago a man who was a long driver was at once stamped as an erratic player, not to be relied upon. Now unless a certain average of distance is maintained, no one can rank as a first-class player.

But it was not merely the old-fashioned weapons which handicapped the amateurs of the past generation. We have only to consider who they were to see that, other

things being equal, they could not possibly have competed with the best players of to-day. In the first place, they were far behind the professionals, which is not the case at present. Secondly, they were, for the most part, middle-aged men; so much so, that it was considered an impertinence for any youngster to play against them. They kept up the pleasing fiction for a long time that at golf, as at whist, the ripeness of long experience was necessary for success; and it required many expositions of the game to persuade them that the cracks of the younger generation, men like Mr. J. E. Laidlay and the Blackwells, were introducing a new and superior kind of play. When, for instance, Mr. Ted Blackwell used to drive across the corner of the railway at St. Andrews, —a carry of about one hundred and seventy yards, — his feat was regarded as a sort of circus trick, wonderful to look at, but quite outside the true sphere of golf. After a while, however, it became apparent that not only could the trick be repeated, but, what was more important, Mr. Blackwell almost invariably beat his opponent; and gradually the old order began to change, making way for the new, which was hastened in its coming by the fresh impulse



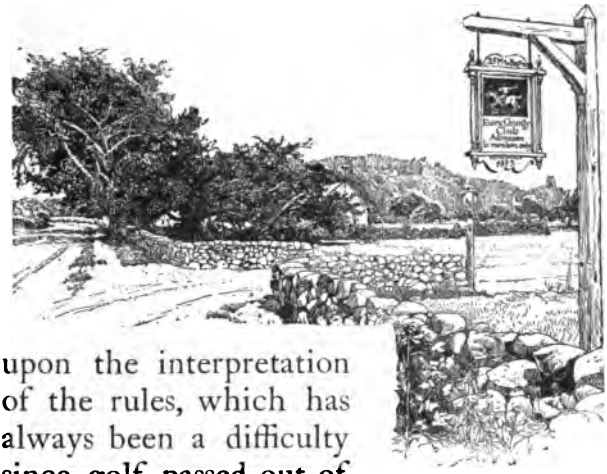
Four Strokes at the Bunker and not over yet.

from the athletes in England. In other words, the kind of golf which could be played by an elderly Scotch judge on Monday afternoon at Musselburgh, in a stiff collar and a high silk hat, ceased to be regarded as the best standard of excellence which could be reached by the amateur. It was recognized now that to play the game to its full advantage a man must be in good health and training, with muscle and eye in perfect accord; and we must thank the English cricketer for helping to

impress this fact upon the hardy but conservative Northerner.

It is now time to turn to the growth of the game in this country, which is the main theme of the present article. We have seen that the sudden spread of golf in England was almost contemporaneous with a new development in the evolution of the sport. It remains to inquire how far that development has been appreciated in America. The particular genius of the American has a tendency to reduce sports of all kinds to a scientific basis; and therefore it is to be expected that sooner or later the lovers of the game in this country will be able to throw some new light not only upon the methods of play, but

Smoking-room of the Essex County (Mass.) Club.



upon the interpretation of the rules, which has always been a difficulty since golf passed out of the hands of the few into the possession of the many, who cannot be controlled by tradition alone, but need the assistance of hard and fast laws. It seems to me that so far the players in this country have been more exercised over the proper reading of the regulations than they have over the development of the game itself. And since it is extremely important that no radical changes should be made in the rules, which long experience has proved to be best adapted to the government of the game, before, at least, it is definitely understood what the game is, it may be well to point out a few of the main shortcomings of the golf that is played on this side of the Atlantic.

You cannot play golf without links, any more than you can make bricks without straw, so that the first consideration is that your links should be as good as possible. It is five or six years since the game was introduced into the United States; and yet the fact remains, that there is hardly a course in the country that in any way approximates a first-class links in the proper sense of the term. Of course allowances must be made for the many drawbacks which have to be overcome in the way of climate and soil; but there are so many errors in the best courses in the country which might easily be remedied, that it seems necessary to indicate exactly what are the features of the best courses in England and Scotland, and what is the standard at which we have to aim. To put it as shortly as possible. Great Britain is encircled for the most part by a belt of sandy soil from half a mile to a mile in breadth which has been formed by the receding of the ocean. This belt of land is of an undulating character, with occasional abrupt sand-hills, and the whole surface is covered with a short velvety turf, which stands a great deal of wear and tear, but is always smooth and soft; even in the rainiest summer the grass seldom grows long

On the Green.

enough on the regular course to conceal a golf ball from sight, while the climate of the British Isles is such that a drought seldom comes to parch the young blades, or scorch the putting-greens. Such a thing as a stone or a tree is practically unknown on the best courses; good play will always secure good lies on perfect turf, while the putting-greens are simply part of the regular course, not laid out with a spirit-level,

but taken as they come with the natural roll of the land, which greatly increases the necessity of skill and accuracy in negotiating the finer part of the game. The only hazards admissible are sand-bunkers, which occur naturally at irregular intervals; the long grass which on the seashore is called "bent," and which generally bounds the edge of the course to prevent wild driving; the gorse, which is an incident of most Scotch links; and, if nature happens to supply it, a water hazard in the shape of a pond or stream. There are cases of stone walls on Prestwick and North Berwick, two of the finest courses in Scotland, but they are there of necessity and not by choice; and to imagine that they are proper adjuncts, would be equivalent to considering that every racket-court must have a cracked wall because there happens to be a slight fissure in the best court at Lords.

Enthusiasm.

Now, the courses which are laid out on this sand-belt of

Wasted time.

Great Britain are not held to be best because they are recommended by custom, but because it only requires a single day upon any one of them to find that the game takes on new features of interest which it has never possessed before. A man who has once ridden upon a modern safety with pneumatic tires would never go back to the old-fashioned high bicycle with thin cushions; so one who has played golf at Prestwick or St. Andrews knows at once what are the possibilities of the game. Imagine, therefore, the astonishment of a Scotch golfer upon reading the accounts of some of the prominent courses in this country. Here are a few examples: "It is an inland course of stone-wall hazards, rocky pastures bordered by ploughed fields and woods, and is prolific in those little hollows known as cuppy lies;" or this: "The hazards are mainly artificial; there

are some stretches of sand, railroad embankment, and deep roads that are tests of skill and temper;" or this: "There are nine holes in the course, which furnishes great variety in its hazards of hills, stone walls, railroad embankments lined with blast-furnace slag, apple-trees, and a combination of terrors in front of what is known as the Devil's Hole, consisting of brook, bowlders, and road, which has spoiled many a score;" or, best of all: "A player who has done a round at the Country Club will have passed over various points of avenue, steeple-chase course, race-track, polo-fields, and pigeon-shooting grounds; he will have come triumphantly through a purgatorial stone-wall jump, a sand-bunker and bastion, a water-jump, and finally a vast gravel pit or crater. . . . Stone walls, trees, ploughed fields, fences, and chasms present excellent sporting requirements on a course."

Many more instances might be quoted, but these are quite sufficient to explain exactly what a golf-links ought *not* to be. A golfer is not a quarryman, that he should go down into a gravel-pit to extricate his ball from the midst of bowlders; nor is he one of the hewers of wood or drawers of water, that he should slash the trees with his nib-

Playing as if he owned the Green

The Golf Links at Tuxedo.

lick like a modern Don Quixote, or cover himself with mire from a muddy ditch. It is understood, of course, that Nature cannot entirely be overcome. The coast of Maine, where there is enough moisture in the air to keep the greens in good condition, is too rocky; while the summer climate of Long Island prevents the courses there from being kept in first-class condition, although the quality of soil is equal to anything in Scotland or England. Still, even if the ideal links can never be quite

attainable, it is possible, by aiming in the right direction, to get a course which shall be for all practical purposes a perfect test of golf. To arrive at such a consummation, it is necessary always to keep the ideal in view; and the first object, therefore, should be to procure the best possible turf all through the course and on the putting-greens. Next, it should be remembered that, if possible, all the hazards, with the exception of a stream or a pond, should be sand-bunkers. Long grass is admissible, but should be avoided in the direct line of play, because it leads to so much waste of time in hunting for lost balls. Every single tree on the links should be ruthlessly cut down. If a picturesque landscape is insisted upon, it is easy enough to leave the woods which may happen to lie on the confines; but they should be regarded as out of bounds, and never played through. Every bowlder and stone should be removed with assiduous care; for they are merely responsible for broken clubs and loss of temper, and have nothing in the world to do with the game. Finally, the putting-greens should be left as Nature made them, except in so far as they are kept in perfect condition by rolling and mowing. They ought

not to be laid out on a dead level so as to preclude any nicety in the judgment of curves, but should be gently undulating, and always guarded in some way by a hazard. In this country it is generally necessary to water them, that they may not become parched and inordinately keen; on the other hand, it must be remembered that the smoother and keener they are up to a certain point, the greater will be the skill called into play both in putting and approaching. A man who has been accustomed to pitch the ball boldly on to a slow level putting-green with fair accuracy, will find himself hopelessly at sea when he

Stymie or not Stymie?

has to contend with a keen slope where a hair's breadth deviation from the true direction will lead to instant perdition. To take cases in point, the putting-greens at Shinnecock, where the championship meeting was held last year, were far too small and keen, although they were beautifully true. Those at Meadowbrook, on the contrary, are perfect in condition; but they are, for the most part, so level and slow, that approach play is rendered comparatively easy.

So much for the nature of the ground. A word or two remains to be said upon the laying out of the eighteen holes. I say eighteen advisedly, because a course of half the distance can never be placed in the first class. The expenses incurred in laying out golf-links in this country are generally so great, that it has been deemed best in most cases to get nine good holes rather than eighteen of an inferior nature. But this should always be regarded as a temporary measure. It is not merely a matter of convenience in tournaments, which can only be held with any satisfaction on a full course; but in every-day play a nine-hole round becomes very monotonous, and does not allow sufficient scope for versatility in the game.

A Good Lie.

As far as I am able to judge, there are many nine-hole courses in the East which are admirably constructed, — Meadowbrook, for instance, being very well laid out; but there is not one of the eighteen-hole rounds that approaches perfection. Take Shinnecock, for instance, which, from the nature of its soil, ought to be an almost ideal field for play: there is hardly a single hole of a good length; that is to say,

The St. Andrews Club, Yonkers, N.Y.

the distances are so arranged that not only is the prowess of the good golfer seldom brought into evidence, but the chances of good and bad are in a fair way of being equalized. The chief thing to aim at in distributing the holes is to arrange them in such a way that each can be reached from the tee by one or two or three *full* shots, as the case may be. That is practically the whole gist of the matter. For it is obvious that, under such conditions, a player cannot miss a single shot, cannot even play an indifferent stroke, without

being penalized. If, on the other hand, the length of a hole is such that it cannot be covered in one shot, and yet if the drive off the tee goes only a hundred yards or so, it can still be covered in two, by the aid of a good second; then it is evident that one drive is, for all practical purposes, as good as another. When there are many holes of such a description, a player may make a bad drive off every tee, and yet defeat an opponent who never misses a single shot in the round. A careful study of the best courses in Great Britain will show that the number of holes measuring from two hundred and forty to three hundred yards are exceedingly rare; in other words, the rule referred to above is the one essential toward excellence.

As for the hazards, they should be sand-bunkers, as far as possible. Sand should be procured, even at a considerable cost, because there is no other kind of hazard that answers the purpose so well. They should be of such a nature that a good player can always extricate himself from the difficulty in one stroke, and they should, above all things, be varied in their construction.

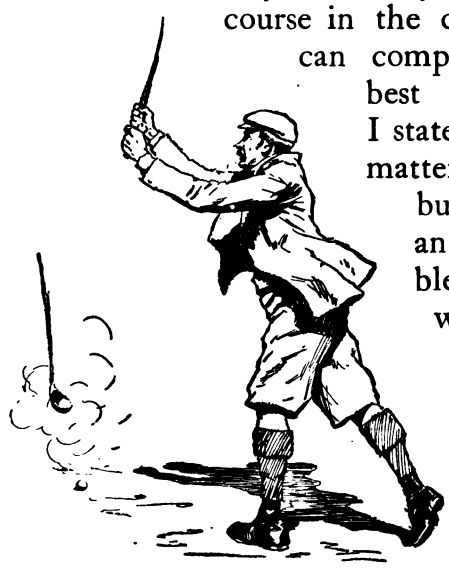
The everlasting line of cops seen on so many of our inland courses are both an offence to the eye and to the intelligence.

The difficulties thrown in the path of a discriminating golfer should be of a far more subtle nature. In driving off the tee, it is generally well to have something in front to catch a missed ball, and the hazard ought to be large and well-defined; a little ditch at one hundred and twenty yards distance is not nearly sufficient, because it punishes only a few out of the many bad shots. If possible, the hazard should extend in many cases over the whole distance between the tee and the carry of a moderate drive. Then, as regards the hazards near the putting-green, particular care should be taken to have them placed in various shapes and positions. A single bastion in front of every hole is more often an aid to success than a ground for misfortune; it is an easy guide to the eye, and induces a player to be bold in his approach,—a quality in which he is often deficient. Hazards should be placed on every side of the hole, more especially beyond it, so that every approach may call for careful calculation. Finally, let me repeat, that trees and stones must, at all costs, be removed; and the requirements of a good golf-course will have been fairly stated.

When we have arrived at such a measure of excellence as this, the difficulties of the

rules and regulations of the game will begin to solve themselves. The United States Golf Association, for instance, passed a rule permitting a player in a match to lift his ball out of any difficulty at the penalty of two strokes. Now, this was in direct opposition to the original idea of the game that the ball should always be played under any circumstances, or else the hole should be given up. The excuse for the change made by the Executive Committee was that there were many courses in the country where conditions were different, and where it would often be impossible to hit the ball at all. The answer to such an argument is apparent. Such a course is not fit for the proper exercise of the game, and ought not to be admitted to membership in the Association. Although it is impossible always to reproduce the perfect turf and bracing sea air of the Scotch links, it is quite feasible to lay out a course in such a way that it may be as good a test as possible of proficiency in the game. Take, for instance, the Chicago Golf Club links at Wheaton. The course has been in existence only two years; and yet when a few additional bunkers are finished, which are at present under construction, it will present as fair a field for the settling of

rival claims as any links outside of the first half dozen or so in Great Britain. Of course the quality of soil is different from that of St. Andrews or Prestwick, but the turf is excellent; a good drive is hardly ever punished by a bad lie; the hazards are of the proper sort, chiefly consisting of sand-bunkers, with an occasional water-jump; and, above all, there are no trees, stones, or buildings on the course. The holes are laid out in such a way as to eliminate as far as possible the element of chance; and, taking it all in all, it is probably the only eighteen-hole course in the country which can compare with the best links abroad. I state this, not as a matter of prejudice, but because it is an incontrovertible fact, and one which should be taken into consideration by all green-committees; for it is a simple proof that nearly



A Foozle.

all the Eastern courses could be improved to a similar extent by keeping the true ideal constantly in view.

The rules of golf have always presented a difficulty to those who are intrusted with the care of framing them; and since there are many points under discussion at the present moment of writing, it will be well to take only a general view of the case. It is quite certain that many of the existing regulations as they stand are faulty, chiefly because, while they have the right aim in view, they leave so much ground for argument and discussion; and it is equally certain that before long the American golfers, who are not bound hand and foot by tradition, will introduce one or two remedial measures which will incense the conservative Briton, but will probably aid the true development of the game. Already an excellent innovation, for which the United States Association is responsible, is the method of deciding the Amateur Championship. It was considered a great step in the right direction when the competition by holes was first introduced into Great Britain; not by a Scotch club, but by the green-committee of Hoylake in England. Since the hole game is the only true golf, it seemed a pity that the Amateur Cham-

pionship should be decided in any other way. A difficulty, however, has since arisen on account of the unwieldy size of the field, which threatens to make the tournament a very protracted affair. It remained for American golfers to solve the problem by inventing the dual method of play; first weeding out the poorer players by two rounds of medal play, and then selecting the champion by several rounds of hole play, — a plan which sounds very obvious and satisfactory as soon as it is suggested, for it cuts down the list of entries very quickly, and also necessitates excellence in both branches of the game; and, after all, the patience and accuracy brought out in medal play ought to count for something. Now, however, there is a proposal to go still farther into the weeding-out process by fixing a definite scratch score for every links, based upon the distances of the holes, and accepting no entry from any one whose handicap at his home club is above a certain limit. Whether this suggestion should be carried out or not is entirely a matter of expediency. If it is found that so many entries are made as to seriously militate against the success of the tournament, it will be necessary to adopt some such scheme for keeping out all those

who have really no chance of winning, but merely enter for practice or amusement. The national tournament is not a nursery for embryo golfers, nor is it fair that a good player should be handicapped by having to go through the preliminary rounds with a duffer who has not the ghost of a chance of winning. One of the arguments against the acceptance of a definite scratch based on distance, is that it can be so easily obviated by a slight alteration of tees, so as to make the score as high as possible, and include a number of players who would not otherwise have qualified. Still, it must be remembered that it is always easy to defeat the ends of any government for the time being; and a certain reliance must be placed upon green-committees to do their best, not only for the interests of their respective clubs, but for the future of the game itself. In this matter of qualification, experience alone will show whether a new regulation is necessary or not; but as a general principle it ought to be remembered that golf is still a very new game in this country, and the would-be iconoclasts should be discouraged from taking any premature action which would alienate us from golfers on the other side of the Atlantic in the meantime, and in

the long run prove to be quite unnecessary.

Those who look for instruction in the science of golf must turn to the pages of the Badminton book, which is still the highest authority on the subject; but it may not be out of place to throw out a few suggestions as to the spirit in which the book should be read. It must be remembered, in the first place, that nearly all the men who have taken up the game in America of recent years have reached an age when it is impossible to acquire the easy suppleness of youth. They ought, accordingly, to modify the instructions which come to them, not only from the literature upon the subject, but from many of the professional teachers, who always seem to forget that their pupils have not had the same advantages in early youth as themselves. It is nearly always wrong for a grown man to attempt a full swing to start with. I have so constantly heard the most promising beginners reproached for what the conventional book-learned player calls a lack of form, that it seems very necessary to point out that a short, clean sweep at the ball is not only far more effective, but far better form, than the angular contortions which go to make up what many beginners are

pleased to call a full swing. In driving the ball, the main object is to keep the head of the club travelling as long as possible in the direct line of flight; and this must be achieved, at first, by letting the club go back only so far as is possible without making an angular bend in the swing. If this steady sweep is constantly kept in view, the beginner will find that gradually he is able to swing farther and farther back as the muscles become more accustomed to the motion, until finally he attains the proud distinction of possessing a real St. Andrews swing. In all other things, moreover, he should exercise his common-sense, and make up his mind that it is his duty to hit the ball clean every time, even if in so doing he sacrifices a good many yards in distance. Above all, let him watch the best players, and get into their style by unconscious imitation. If our beginners would only walk round with their professional teachers, and feel, as it were, the easy method of sweeping away the ball, they would learn far more than they do in a hundred verbal lessons; and when they play they should always play matches, and not trudge round the links with a pencil and score-card, trying to lower a record of their own which is absolutely meaningless. The young player

who can take odds from his elders and betters, and compete with them more or less successfully, is far nearer the road to grace, although his total score should mount up ever so much higher than the record of the solitary and introspective knight of the pencil. Life would be far more worth living on a golf-links if there were a rule in every club forbidding a member to mention his score, or talk at length about the lowering of a record which nobody but himself cares about, and even he himself only half believes in. The game was originally intended to be a friendly contest of skill; the middle-aged beginner has made it a fruitful source of lying and self-deception, and a very scourge to his friends.

One word should be said about the courtesies of the game. There is no pursuit in life which exhibits the best and the worst of a man so freely as the game of golf. That a control of the temper is absolutely essential for success goes without saying, and there are many little points which suggest a loss of that control if certain rules of etiquette are not strictly observed. The most important of these is the way in which the rules are interpreted; and there seems to be only one way of dealing with the matter. First of all, if a penalty is in-

curred for any reason, the player should at once admit it, without waiting for his opponent to call his attention to it; and no matter how trifling the breach of rule, or how unimportant the game, the full penalty should be conceded, whether the opponent desires it or not. On the other hand, if the opponent should move his ball, — for instance, in addressing it, — it is his business to count the stroke, for stroke it is, just as much as the longest drive that was ever struck from the tee; and, except when playing for a medal, he should be left entirely to himself in the matter. To put it shortly, the word "claim" has no place in the golfer's vocabulary. It may be argued, of course, that your opponent may then take advantage of you. If he does, your remedy is simple, — never to play with him again. In the meantime, if every golfer were intent upon acting up to the very letter of the law, there could never be any possibility of dispute. After all, it is a game for gentlemen; and, unless that is kept in mind, unpleasantness becomes endless. Perhaps it is this very fact which has made it so popular in this country, where the other great games are in danger of getting entirely into the hands of professionals. That being the case, it is most

important that the tendency to multiply tournaments and lavish handsome trophies on indifferent players should be checked at the outset of our golfing history. Ten years ago the best players in the world were content with the custody of one or two small medals which they could not even keep; and I confess that, in the best interests of the game, I wish the same state of things existed now. Possibly we shall have a revulsion of feeling in a short time, and golf will take on again its garb of Caledonian simplicity.

LAWN TENNIS

By Robert D. Wrenn

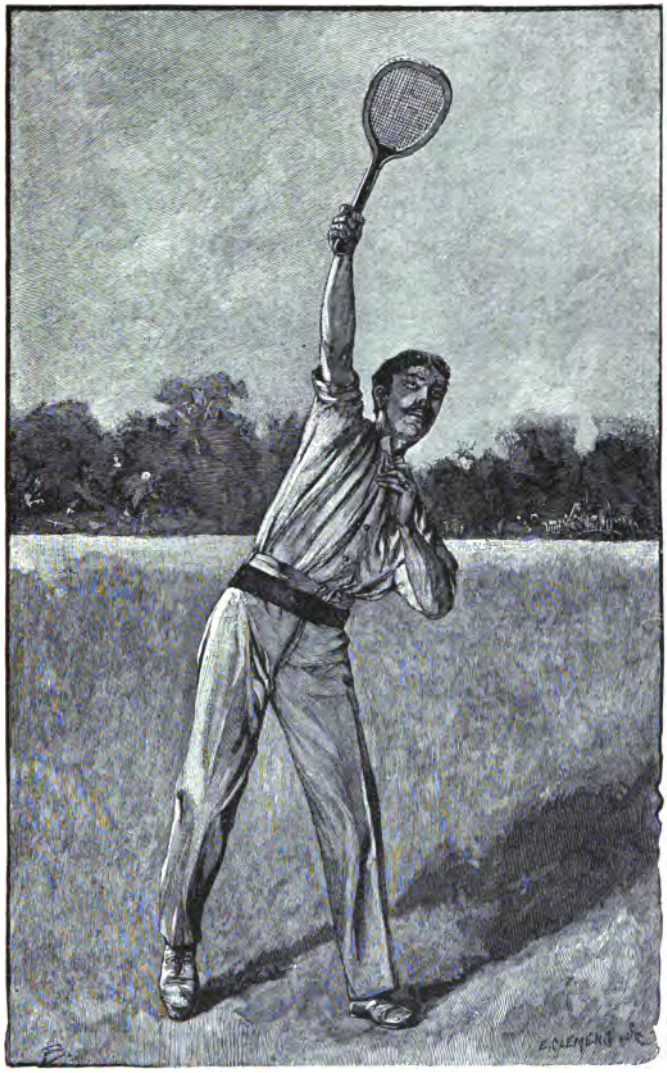
(*Champion of the United States*, 1896.)

Fore-hand Volley.

THOUGH the tennis enthusiast is loath to admit the fact, it must be conceded that during the last two years lawn tennis has not held its own in this country, or, in fact, abroad. If we look into the reasons for this temporary falling off in popularity of a game which has hitherto been in such favor, we are brought face to face with golf and cycling. It may not be out of place to state here that the American is, above everything, fond of innovations; so no sooner was the game

of golf fairly introduced from England, than rackets were stored away to give place to the new fad. Understand, I do not decry golf: it has come to this country to stay, and is deservedly popular; but I do feel, and feel strongly, that once the novelty of the game has worn off, there will be a return to the ranks of tennis by the many who care for a keener form of exercise than the golf course permits. Cycling, too, for the time being has made inroads on tennis, allowing to a part of the public, at least, no leisure for other sport. However, even with such formidable rivals in the field, we are bound to preserve a game which embodies so many good qualities; and surely no one will gainsay that, as a healthful form of exercise which puts in use every muscle of the body without an injurious strain; as a school of training for nerve, judgment, and quick thought; and finally as a sport which generates the keenest spirit of rivalry, tennis has no superior.

While tennis may have lost ground in the public eye, if we follow the development of the game in this country, there is a gratifying advancement to be noted along many lines. It is true we have not reached



The Smash

the proficiency of our English cousins — that is but natural considering their long schooling in the game; then, too, the English season is longer not only in months, but in the hours of each day, and where we can devote one hour to practice, the average Englishman can devote three. Another advantage to our rivals lies in the fact that they keep up their game to a much greater age than we do. It has always seemed a pity that so many of the best players we have produced have retired from the game at an age when they should be in their prime. Our business requirements are in a measure responsible for this; but it is a fallacy to contend that once in business, there is no possibility of holding top form. What we need is a longer tennis life in this country — if the expression can be used. In England a player is almost always improving until he is thirty, and frequently after that age. Take the case of Dr. Pim, champion of England in 1895. It was only at the age of thirty-four that he won his coveted title, after years of defeats.

Notwithstanding the drawbacks just enumerated, we are certainly closing up the gap which has separated us from the best of the English field of players. W. A. Larned's

Fore-handed Service.

record abroad during the past season is a convincing proof of this. While it is true that he won none of the larger tournaments, his matches were a succession of close fights which brought him twice to the final round, and reflected the greatest credit on his play. We are indebted to

Reverse Over-hand Service.

the courtesy of the English official ranking committee for including Mr. Larned's name in its classification of players, and thus giving us a line of comparison between the best men in each country. When it is considered that in all England

he was ranked sixth, in a class just after the three leaders, there is cause for congratulation. We have here the natural deduction that the general standard of play of our "first ten" is very close to that of the corresponding class in England; for though Mr. Larned's all-around game was probably the best in this country last year, there were four or five others who were nearly even with him, and could, therefore, have made a creditable showing on the other side. And right here a word of patriotic vanity! It seems to me that the American is cut out for a better tennis player than his English rival. It is proverbial that he has more energy and zest, — two important factors in the necessary make-up; and when by longer experience he has acquired a steadiness and coolness at critical times, and lost a little of his desire to win points too quickly, he should make the better player.

Now a word on the game itself.

Tennis offers a certain liberty in style of play that is apt to be abused. I point particularly to the "net" and "back-court" games, which have become so distinctly separated of late years. The former name is applied to those players who make the majority of their strokes from a position in

End of Under-hand Twist Service.

the court between the receiving-line and the net; or, in other words, a net player is one who makes it an object to reach the net at every opportunity, in order to "vol-

ley" his returns. In the "back-court" game, as the name implies, the returns are made from far back in the court, and of course "off the ground;" i.e., after the ball has bounced once. I speak of *abuse* with reference to these two distinct styles, because instead of allowing one to aid and abet the other, there is a tendency among

Fore-hand Stroke.

our leading players to choose one method, to the partial, or even entire, exclusion of the other. If beginners would bear in mind that a net game is perfected only when it is backed up by accurate back-court work, and *vice versa*, a much more rapid improvement could be counted on.

It is but natural that as success attends one line of play, we are tempted to overdo it, forgetting that by too constant use we teach an opponent what to expect, thereby weakening our game.

As the first exponent of the net game in this country, O. S. Campbell made his mark; and it is to his remarkable proficiency in this department that he owes his three successive championships of 1890, 1891, and 1892. Since that time his following has been large; though no one, barring C. B. Neel, has carried his methods to such an extreme. When Neel appeared before the Eastern public for the first time at Newport in 1895, comparatively unknown and certainly underrated, his easy defeat of M. G. Chace — who with R. L. Stevens ranked as the best back-court player in America — was a great surprise. It was volley against ground stroke throughout, — a test, as it were, of the two schools, and for that reason aroused much interest.

End of a Back-hand Stroke, off the Ground.

Though Chace hardly held to the game he is capable of, the persistent and untiring returns of his opponent, whether from a lob or a side-line drive, were in great measure responsible for his "falling off."

To play well at the net, one must think and act simultaneously; there is no time for cool consideration, or even the fraction of a second's grace accorded to the back-court player as the ball rises from the ground. If the chance presents itself,

through the weak return of an opponent, the ball must be "killed," or cut to the side line with such nicety that there is no possibility of a return. This latter stroke is effected with a quick wrist movement, requiring not so much strength as delicacy, and only acquired by long practice. Our double champions in 1894, C. Hobart and F. H. Hovey, are past-masters of this art, which makes their game a brilliant one to watch.

Opposed to the class of volleyers, R. L. Stevens stands out prominently at the head of the back-court players. Within the last year he has not kept so rigorously to the base line, but it is only on rare occasions that he approaches the net. By his wonderful accuracy and steadiness he is enabled to meet on equal terms the best net players this country has produced; but his is the exceptional case. M. G. Chace, too, is essentially a back-court player; but he varies his brilliant low drives from the base line with now and then a rally at the net. In the judgment of Dr. Pim and Mr. Mahoney, who spent a part of the 1895 season in this country, M. G. Chace's game showed possibilities above anything they had met with. Certain it is, that for good form, endurance, and accuracy he is remarkable.

Second only to him in these characteristics comes G. L. Wrenn, whose game promises much for the future.

In the base-line game, a steady ground stroke fore- and back-handed is indispensable. One must be able to "cross-court" or drive down the line at will. Much of the success of these strokes depends upon the rapidity with which they are executed;

The Cut.

Back-hand Volley.

for it is fatal to allow an opponent at the net to discover the intended direction of the ball.

The lob also is an important factor in the make-up of back-play. Until recent years this method of tossing a ball high in the air over an opponent's head was relegated almost entirely to defensive tactics; it was valuable only as an escape from an awkward position, or to gain time for a short breathing-spell, but now it embraces new functions, which have brought it to the front as a strong offensive stroke. As a means of tiring out an opponent, it has

Back-hand Half Volley.

been tried in long matches with surprising results; and though this sounds like a negative sort of praise, we may as well admit that the value of a stroke is determined by its effectiveness, and give the lob credit for what it accomplishes. I recall at least three important matches during the last tennis season which were practically won by systematic lobbing.

There are two distinct kinds of lobs which will bear careful study. In using the first, the ball is tossed just high enough to be fairly out of reach of an opponent who has taken his position very close to the net. The stroke is made with the idea of allowing him no time to rush back and return the ball as it bounces. The second lob is tossed high in the air, — the higher the better, — so that its descent will make a nearly vertical line. To "smash" such a ball, even should it fall close to the net, is not easy; while if it is placed near the base line, there is likelihood that it will be returned out of court.

Where we show at a disadvantage with English players is in the back-hand stroke. It is no uncommon sight, even in the National Championship, to see a man, if not actually running around the ball, at least so favoring his back hand that a part of

his court is left unprotected. The mere fact of shirking a stroke is proof of weakness, which will be taken advantage of at once by a clever opponent.

A simple practice, which I have found invaluable in improving weak ground strokes, is to spend some half-hour a day in batting balls against an even wall on which a line has been marked three feet from the ground. If the work is done

Half Volley Backward.

carefully, with the idea of detecting faults, I can guarantee good results.

In the separate analyses which I have made of the net and back-court games, I hope that my main point will not be missed, — that it is a combination of these two styles, and not the perfection of one singly, which is necessary to the success of a player. Let it be remembered that a good all-around game will win where brilliancy in one department fails.

BICYCLING

The Wheel of To-Day

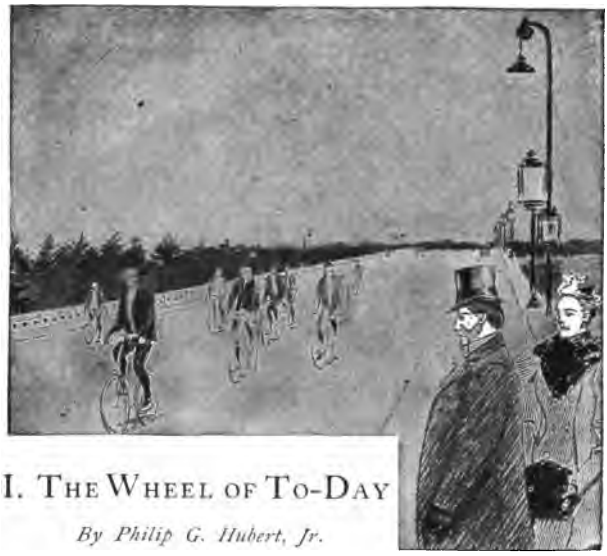
By Philip G. Hubert, Jr.

Woman and the Bicycle

By Marguerite Merington

A Doctor's View of Bicycling

By J. West Roosevelt, M.D.



I. The Wheel of To-Day

By Philip G. Hubert, Jr.

FROM the time of my early childhood I have had the notion that flying must be the height of bliss, and not even the example of Darius Green and his mishaps deterred me from an attempt at a flying-machine. When I was nine years old I constructed a pair of wings. Nevertheless, like the small boy who defined faith as "believin' a thing that you knew wasn't true," I had faith in my flying-machine, but an innate conviction that it might not work. So I fastened it to the arms of a younger brother before pushing him off

the roof of our woodshed. I had assured him that with those wings he could fly in a way that would surprise him. It did surprise him. He came to the ground in a condition that resulted in a sound thrashing for me.

Some few years later, when in Paris, I paid a franc to see a flying-machine,—it looked like the combination of a washing-machine and a windmill,—which the venerable proprietor and exhibitor assured me would soar into the air like a bird could he but raise the money for two or three cogwheels and other trifles still needed to perfect the apparatus. That was a good many years ago, so that I presume he never raised the money.

Having always had this mild mania for flying, I was much impressed a few years ago when some one said to me: "If you want to come as near flying as we are likely to get in this generation, learn to ride a pneumatic bicycle." Then I began for the first time to take a serious interest in the bicycle upon which my eldest boy was so fond of scurrying around the country; and to-day I am only too willing to say all that I can in its favor. When one begins to tell why the bicycle is one of the great inventions of the century, it is hard to be-

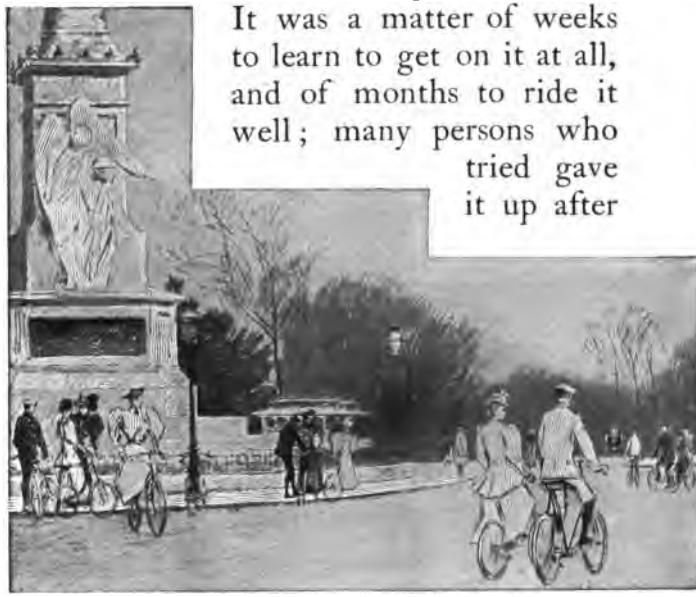
gin, because there is so much to say. A bicycle is better than a horse to ninety-nine men and women out of a hundred, because it costs almost nothing to keep, and it is never tired. It will take one three times as far as a horse in the same number of days or weeks. In touring with a bicycle I can make fifty miles a day as comfortably as twenty miles on foot; and I can carry all the clothing I need, besides a camera and other traps. The exercise is as invigorating as walking, or more so, with the great advantage that you can get over uninteresting tracts of country twice as fast as on foot. In fact, as any bicyclist knows, walking seems intolerably slow after the wheel; even easy-going tourists, with women in the party, can make forty miles a day, and find it play. Perhaps even greater and more important than its use as a touring-machine is the bicycle as an every-day help to mechanics, factory hands, clerks, and all people who live in or near small towns. Thanks to this modern wonder, they can live several miles away from their work, thus getting cheaper rents and better surroundings for their children; they can save car-fares, and get healthful exercise. For the unfortunate dwellers in cities it offers recreation after working-hours, and

induces thousands who would never walk to get out into the air, and find out for themselves that life without out-door exercise is not living.

How tremendous has been the change in the fortunes of the nickel-plated steed within the last five or six years can only be realized by those who remember the first bicycle exhibitions of a few years ago, and can compare them with the wonderful show held last January (1895) in the Madison Square Garden in New York. The early shows were held in dingy little halls, and attended by a few thousand persons, who were looked upon by the majority of other people as grown-up children. The bicycle was still a toy five or six years ago. Half a dozen manufacturers exhibited their wares; and the pneumatic tire, then a curiosity imported from England, was viewed with interest, but much doubt as to its practical usefulness. The wheel was still something of a curiosity as a machine for grown men; while women who braved public opinion far enough to ride one in public were looked upon with suspicion.

The high 52-inch wheel, upon which the rider perched himself at the risk of his neck, was still the only one in common use; and had the "Safety" pattern

not appeared, it is pretty certain that we should see but little more of the bicycle now than we did then. When I look at the high wheel to-day I rather wonder that any one was ever reckless enough or skilful enough to ride it. It was a matter of weeks to learn to get on it at all, and of months to ride it well; many persons who tried gave it up after



The Grand Circle at Fifty-ninth Street and Eighth Avenue, New York.

a few bad falls. At best, the big wheels of a few years ago were fit only for athletic young men; they were out of the question for all other persons, and of course for women. The pneumatic tire has been credited with the rapid growth of the

bicycle craze, but the introduction of the "Safety" pattern has had much more to do with it. The pneumatic tire adapted to a high wheel only made it higher and heavier. When a wheel was offered that any one—man, woman, or child—could learn to ride well inside of a fortnight, that exposed the rider to no dangerous falls while learning, and that possessed all the speed of the high wheel, with none of its dangers, then, seemingly, every one began to talk bicycles. Now no one is too old or too young to ride a "Safety," and the woman who objects to bicycling is soon likely to be looked upon as more eccentric than her sister who skims along the road in bloomers.

While the "Safety" pattern made the bicycle possible to every one, of course the pneumatic tire is a great invention. Persons who have never studied the action of this tire may not realize that its purpose is not merely to act as a spring or cushion, but much more. Some pretty experiments made this last winter make this clear. It was shown that upon a perfectly smooth board floor less power was required to propel a steel-rimmed wheel than one with a pneumatic tire. But let a few fine pebbles be sprinkled upon the track, and then

the power required for the steel tire had to be doubled, and even tripled, while that for the pneumatic tire required only a slight increase. The reason is simple enough. Whenever the steel rim encounters an obstruction the whole wheel and the weight it supports has to be lifted in order to go over it; with the pneumatic tire the pebble simply makes a dent in the soft tire, which passes over it without rising. A country road, or almost any road except a smooth floor, offers to the wheel a succession of minute obstacles. The power required to haul a rubber-tire vehicle loaded with 300 pounds over a fairly good gravel road averages 20 pounds, with a maximum of 26 pounds; with a steel-tired vehicle on the same road the average was 41 pounds and the maximum 79 pounds, or three times the resistance of the rubber tire. Hence the remarkable gain in power as well as in comfort effected by the air tire.*

At the show of last January every inch of space in the vast building seemed to be utilized for the display of bicycles, and more was needed. One or two prominent manufacturers felt so aggrieved at the small

* For a full report of these experiments, see *Good Roads* for January, 1895.

quarters offered them, that they refused to exhibit in the Garden, and organized shows of their own outside. Experts at figures estimated that at least thirty million dollars of capital were represented. There were nearly one hundred different makes of bicycles shown by eighty firms, while a score of manufacturers exhibited nothing but bicycle accessories, such as tires, saddles, lanterns, cyclometers, etc. For a whole week the place was crowded.

Various estimates have been made of the output of bicycles for 1895, the figures running as high as four hundred thousand. The sales of wheels last year are said to have been two hundred and fifty thousand. It is generally reported that the business has taken a sudden jump within the last six months, and almost all the manufacturers have been running their factories night and day. An important feature of the business, from the manufacturer's stand, is the growing export trade to Mexico and South America, and even to Europe and Australia. At a bicycle tournament held in the city of Mexico last January, our American riders carried off most of the prizes; the whole population seemed to be bitten with the bicycle craze. English and French manufacturers

have endeavored to keep our machines out, but without success. The Mexicans found, as we have already found here, that the English standard bicycles are heavier by ten pounds than our own, without any compensating advantages.

In one respect the bicycle show was peculiar; all classes seemed to be represented. At the horse show, for instance, or the dog show, the mechanic is never seen; at the bicycle show I noticed hundreds of men, evidently prosperous mechanics, who had come to see more of a machine that offered them at once economy and recreation, a healthful exercise and a saving of car-fares in getting to and from their daily work. One manufacturer to whom I mentioned this feature of the show said that bicycle-makers were particularly interested in the hundreds of bicycle agents from all over the country who came there every morning, and who wanted machines to sell to workingmen. There was not, he said, a village of five hundred inhabitants within a thousand miles of New York that would not have its regular bicycle agent this summer. "I really believe," said he, a shrewd Yankee, "that between electric cars in cities and the bicycle in the country, the value of horse-flesh will drop

almost to nothing within the next twenty years. The time is fast coming when a good, serviceable machine will be sold for $50, or less. Already in every village and town the mechanic and factory hand goes to his work on his wheel, the postman takes his letters around on one; even the doctor and the clergyman make their rounds on wheels. It is far more than a recreation. And these hundreds of agents all talk of the wheel they are going to offer in their towns, not as a sporting machine, but as an every-day necessity; they want to know about the durability and the practical work to be got out of a wheel, and its value to the mechanic and shop-clerk."

I was glad to find a manufacturer who would admit that we should some day get good machines for less than $50. Personally I am satisfied that a poor bicycle is a most costly affair. At the same time, the price asked for the best machines, although it has dropped this year from $150 to $125 for specials, and from $125 to $100 for standards, still seems out of proportion to the actual cost. It is said that a good sewing-machine costs less than $10 to make; and it is hard to see why a good bicycle cannot be sold at a fair profit for $50 or less. Probably when the sup-

The Start from the Westchester Country Club.

ply catches up with the demand it will be. This year's cut in prices is a promise of better things to come.

Among the novelties of last winter's show the greatest interest seemed to be aroused by the motor bicycle, the hill-climbing attachments, the bamboo and

aluminum frames, and the tandems. The motor bicycle, as its name implies, is one to which a hot-air motor, worked by naphtha or kerosene, is attached. It has been used a little in the western part of this State, but until this last show we had seen nothing of it here. In appearance the motor bicycle is longer than the ordinary "Safety," and its whole build is stronger and more clumsy; its frame is solid, and its tires are of what is known as the Jumbo type, — enormous affairs, three inches in diameter. The motor, or rather motors, for there are two, one on each side of the rear wheel, are small enough to be contained in brass cylinders about a foot long and four inches in diameter. The supply of oil or naphtha is carried in a cylinder placed near the handle-bar, from which the oil trickles down to the motor through one of the frame tubes. The pair of motors weigh but twelve pounds, and are said to furnish two-horse power at an expense of one gallon of oil for one hundred miles. The oil is ignited at every stroke of the piston by an electric spark. There are foot-cranks for use in case the motor should give out. The danger of explosion is said to be nothing. On the day of my

visit the motor bicycle was not working as usual in the basement, owing to some accident. Some of the *habitués* of the show, who had seen the thing run, told me that it seemed to work well enough, but made a good deal of hissing noise. Admitting that it will do all that its manufacturers say, the present cost will prove an obstacle to its wide introduction, the cheapest form being sold at $275, and another, — a four-wheeled affair, — at $500.

Within the last two years several forms of hill-climbers have come into use, all of them, however, constructed upon virtually the same principle, — the introduction of a gearing which shall cause the pedal to make fewer revolutions in proportion to that of the driving or rear wheel; in other words, such devices increase the leverage of the pedal. An old and experienced bicyclist, fond of "century runs," or one hundred miles at a stretch, — which I am not, — remarks that so far as he has been able to find out, these hill-climbing devices work well enough, but he doubts their value. If the hill is too hard to ride up, it is steep enough to walk up. Any device to change the gearing at will adds just so much to the cost and intricacy of the machine. I may add, however, that

such advice may apply to strong and seasoned riders, who can "pedal" over hills up which the ordinary bicyclist is obliged to foot it.

The much-talked-of bamboo and aluminum bicycles may come under the head of attempts to get rid of weight. In the bamboo bicycle, rods of polished bamboo, let into aluminum castings, are used for the frame instead of steel; a steel wire tightened by nuts runs through each rod. The gain in lightness is not great, but the makers claim that the machine runs with more elasticity. Speaking of lightness, aluminum seems likely to achieve wonders for the bicycle in the near future, provided its tendency to corrode under salt air and water can be corrected. Some of the lightweight machines were wonderful, especially one weighing less than nine pounds, which was ridden at the show by a man weighing more than two hundred pounds. Five years ago the average weight of the road bicycle was from forty to fifty pounds. Now anything weighing more than twenty-five pounds is looked upon with disfavor.

The tandems, upon which, as the name implies, two riders sit, one behind the other, and the duplex bicycles, in which the riders sit side by side on a sort of tri-

Claremont Hill — Riverside Drive, New York.

cycle, were much in evidence at the show, but do not seem to be gaining favor so fast as the single bicycle. The power used to propel the best form of tricycle is nearly three times that required for a bicycle, so that, even divided between two riders, there is a loss as compared to the bicycle. It is also to be said that there are thousands of miles of country road upon which a bicyclist can find a suitable path, a foot or two wide, where a tricyclist would have a hard time of it. Also, that where the road is broad and level enough for a tricycle, two bicyclists can run along side by side, near enough for conversation; while, when it narrows, they can take up single file again.

Of bicycling accessories at the show there was no end. Good lamps and cyclometers may now be had for half what they used to cost. Saddles are wonderfully improved, the newest saddle being made of wire springs, looking like piano wires, which, if durable, ought to be perfection, as it is light, cool, and yielding.

With regard to a number of points concerning the bicycle and its use, more can be learned in five minutes' talk with any intelligent agent or amateur than can be told here in many pages. The height of the saddle, the safe distances for a begin-

ner to attempt, the best ways of learning to ride, depend almost wholly upon the rider. Some riders like a high-geared wheel, — for instance, sixty-six or more inches; that is to say, one in which every full turn of the pedal is equivalent to the revolution of a wheel sixty-six or more inches in diameter. The higher the gear, of course, the more power required at the pedal; for which reason the low gears, not exceeding sixty-three inches, are best for all-day work in touring. With a very high gear hill-climbing is out of the question. Concerning the details of equipment, — whether with a brake or without, single or double tires, mud-guards or no guards, metal or wood rims, rubber or rat-trap pedals, each rider must decide. The present tendency is to do away with every superfluous ounce of weight, and brakes, guards, rubber pedals, all mean weight, and are not essentials. The battle between the tire-makers as to the comparative value of single or double tires is not over. Both have advantages. The double tire, — one thin rubber tube containing the air, protected by a stout outer tubing, — is not so easy to repair as the single tire, but neither is it so easily punctured. Wooden rims seem to be having the preference over

metal; but some of the aluminum rims are equal to wood in every way, and even lighter.

So delicate a piece of machinery as a bicycle of course needs care. Every agent will explain how it must be oiled, — one oiling to a hundred miles is the usual rule, — and the chain rubbed with the mixture of plumbago and tallow sold for that purpose. After use, the machine should be cared for as conscientiously as a good gun, if it is to do its best work.

To the beginner in bicycling I should like to say, Beware of the cheap bicycle! I know of nothing more disheartening than to have a trip, upon which one may have counted for weeks, cut short by the breakdown of a machine. Of course accidents will happen to the best of bicycles, but as a rule they are not serious enough to necessitate long delays. You may run over a piece of broken glass thrown upon the highway by some fiend in human shape, and thus puncture your tire; or a spoke may break, or a nut work loose. But in such cases, if you cannot make the repair yourself, — which usually you can, — there is a bicycle shop in almost every village nowadays where such things may be made right. But when the mishap is due to

radical weakness or bad workmanship in the tire, the frame, or the castings, the best thing to do is either to sell the machine for what it will bring, or never venture more than ten miles away from home. I once made the blunder of getting a cheap bicycle for my boy. No one would imagine that a bicycle could have so many failings as that one developed. Its maker's motto might have been, "For Repairs Only." It was a fortune to the man who repaired it. As fast as one break was patched up another appeared. Several most promising expeditions were broken up by the failure of that rotten machine. One day we started off, my boy and I, to ride from Stamford, Conn., to New London, by way of Long Island, crossing the Sound at Bridgeport. It was a week's trip that we had planned for months, and we got lots of pleasure out of the planning and anticipation. In fact, all the pleasure we got out of the trip was of this kind. Our start was a delightful one, early on a lovely June morning when it was a pleasure to breathe, to say nothing of riding a bicycle. Through Darien and Norwalk we pushed gayly on, counting upon reaching Bridgeport, a distance of twenty-five miles, before the noonday sun got a chance

at us. For perhaps the tenth time I exclaimed that a bicycle tour was one of the joys of life, when, Bang! — like the explosion of a pistol, the rear tire of my boy's wheel burst. He had run over no glass or nails; the tire had simply exploded in a long slit with which we could do nothing. That was the end of our expedition. We got the wheel to the next town, where an expert told us that he could mend the break, but that the same thing would happen again in an hour. The tire was simply too cheap or rotten for the work.

There are people who declare that there is a certain maliciousness about a bicycle's behavior nothing short of the miraculous. Doubtless we riders all remember the delight every bicycle takes in guiding the beginner straight toward any big bowlder that may be in sight; the road may be fifty feet wide, and that the only bowlder within half a mile, but do what we may, the bicycle makes unerringly for that stone, even if it takes us twenty feet out of our way to do it. And if there is anything the bicycle likes better than a big, sharp bowlder, it is a deep puddle. A muddy hole of any kind is a perfect magnet to the bicycle when ridden by a beginner. Experts insist that the beginner's own ner-

vous fear is at the bottom of such mishaps, but the beginner knows better.

A strong confirmation of the theory that credits bicycles with innate viciousness is to be found in the fact that when bicycles do break down it is always just where the accident will give the rider the utmost trouble. In my time I have had a good many annoying accidents happen to my bicycles, but never within a mile or two of home. I could ride my wheel over broken glass and tin cans all summer if only I kept near home. But let me decide upon a touring-trip, and start off, — unless I have a really first-class machine, something is sure to happen. In the course of one short tour last summer I was unlucky enough to break one of the frame-bars the second day out, and the pedal-crank the third day. The frame I patched up with the aid of some wire and a friendly blacksmith. The pedal-crank, a piece of steel, could not be fixed. And of course that crank broke when I was fifteen miles from a railway station, in a forsaken district near Salem, back of New London. There was a flaw in the casting. It was the hottest day of a hot summer, — July 20, — and the accident happened about noon, the hottest part of the day. It is

At the Michaux Club, New York.

bad enough to know that you will have to give up your trip, for a new crank-bar takes time to get. It is worse to have to trundle a wrecked machine for miles, stopping at every farmhouse, like Mr. Pickwick with his balky horse, to ask for help. Finally, after risking sunstroke for an hour or two, I found a boy who drove me to New London, reaching there after six o'clock. I never swear; if I did, it would be upon such an occasion, when a rascally manufacturer sells something that will not do the work it is bought to do. That one or two such experiences do not disgust one forever with bicycling shows the charm of the thing. A poor bicycle is a most costly investment.

In the manufacturing town where I live in winter, I know scores of men who get pleasure and profit out of their bicycles by riding to and from their work; and I know, also, that there are thousands of city men and women who delight in spinning along the asphalt pavement of the boulevards after the day's office-work is done. Such use of the bicycle is well enough so far as it goes; but for those who can make the opportunity, the greatest boon the machine offers is the possibility of roaming over much interesting country at small expense.

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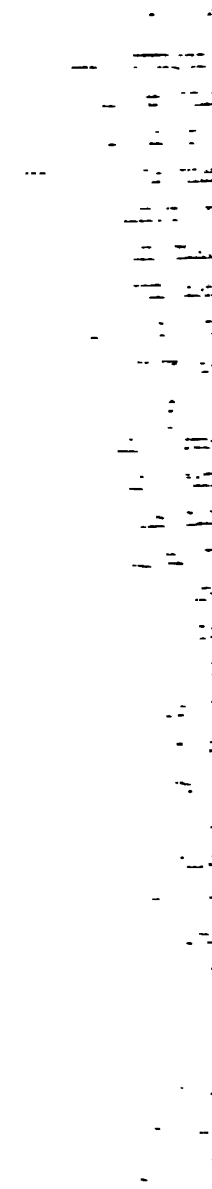


walk up all hills that deserve the name, and stopping to pick a flower or admire a view whenever the spirit prompts.

By starting at seven o'clock, which is not an early hour in summer, — six o'clock is better, — I have made my thirty miles at noon. During the morning I am pretty sure to pass a baker's shop where good things are on view; and I buy some rolls or crackers, carrying the bag with me until I come to some quiet nook, the bank of a stream by preference, where I can wash, eat my luncheon, take a look at the morning paper bought in the last village, and smoke a pipe. The noon stop does not last more than an hour. By one o'clock I am a-wheel again, and ready for the three hours' run that will finish my fifty miles at four o'clock, when, if my route is rightly planned, I ought to reach some town or village where I find a suitable hotel. Once there, I put on fresh underclothes, the soiled clothes of the ride going to the laundress to be washed out at once; and I am ready for an inspection of the town at the pleasantest hour of the day, — when the sun gets low, and every one turns out for a breath of air. And, no matter what the heat, I am ready for the best dinner that mine host can offer, and a good night's sleep. Such

touring need not cost more than two dollars a day for each person.

I know that some men, fond of touring, adopt a wholly different plan, — they ride early in the morning and late in the afternoon, taking a long rest in some shady nook during the heat of the day. For several reasons, and after trying both ways, I prefer to make my day's journey in practically one stretch. In the first place, on account of clothing. Except in really cold weather the bicyclist is pretty sure to find himself covered with dust and bathed in perspiration at the end of his morning's ride. Therefore, if a stop of several hours is to be made, he must change clothing by the roadside, and either wash it out himself in some stream, or carry it with him till night. He must take it off, or he will catch cold, sitting and sleeping in the shade. In the next place, unless he knows the road exactly, and the distance he has to make, he will feel more or less hurried; the chances are two to one that he will arrive at his stopping-place covered with dust, his second suit of underclothes soaked in perspiration, late for dinner, and too tired to enjoy it. By the time he has washed and dressed, dined or supped, he is too tired to look about the town, which may be well

worth the attention; and he thus loses what to me is one of the pleasures of my trips, — the stroll along streets that are new to me, and the sight of hundreds of strange and sometimes pretty faces. To wander around a quaint New England town wholly new to me, to watch the shopkeepers light up their wares for the evening, to see the life and brightness of the place as the electric lights burst forth, and the streets fill with people, — all the people in these small towns seem to do their shopping in the evening, — and perhaps to end by a visit to the local theatre, — all this consti-

Tea at the Michaux Club.

tutes a feature of a tour that I prize. Or I may go to church. In either theatre or church you may see the people of the town face to face, and learn more about them than by days of loitering in their streets.

A friend with whom I once made a bicycle tour believes that the expense of such trips could be much reduced by eliminating the hotel, and camping out. His plan necessitates the carriage of some sort of tent, cooking utensils, and food to last for a meal or two. I have never tried it, but may do so this summer. We propose to use a light drill for tent material, the two bicycles forming the ridge-pole, and the tent being thus not more than three feet high, a mere covered hole to crawl into when bedtime comes. Aluminum cooking utensils might be used. Firewood may be found anywhere. If cooking is out of the question, owing to the weight of the apparatus, it would be easy to buy one's meals in the villages. The objections to this scheme are apparent; and except to show upon how few cents a day one may enjoy the pleasures of travel, I have my doubts about it. To make a comfortable bed on the ground will require much clothing, which again means weight. There is also the

danger of catching cold, the difficulty of getting washing done, etc.

While talking of weight, it may be worth while to say something of the touring outfit that I have found most convenient. The best clothes-carrier is the flat, triangular bag built to fit between the frame-bars; it is better than a knapsack strapped to the handle-bar, because the weight is carried lower down, making the machine less top-heavy, and it leaves the handle-bar free for any light parcel. My outfit consists of three light outing-shirts, three suits of gauze underclothing, a dark flannel bicycle suit, laced tanned gaiters, light-weight rubber coat, comb, clothes-, hair- and tooth-brushes, soap and towel, cup, writing-pad and pencil, map and matches; and, of course, the regular kit of tools, and materials for road repairs. Another suit of clothes suitable for calls and Sundays would be pleasant to have, and other shirts and shoes; but this means weight. Now that the bicyclist's knickerbockers are seen everywhere in summer, even at the theatre and in church, it is hardly necessary to carry more than essentials. An umbrella is not needed. If one has a rubber coat for stormy weather, he can ride, rain or no rain, while it is next

to impossible to ride and carry an umbrella, whether for sun or rain. Gaiters are better than low shoes, which are apt to fill with sand when the road is too soft to ride.

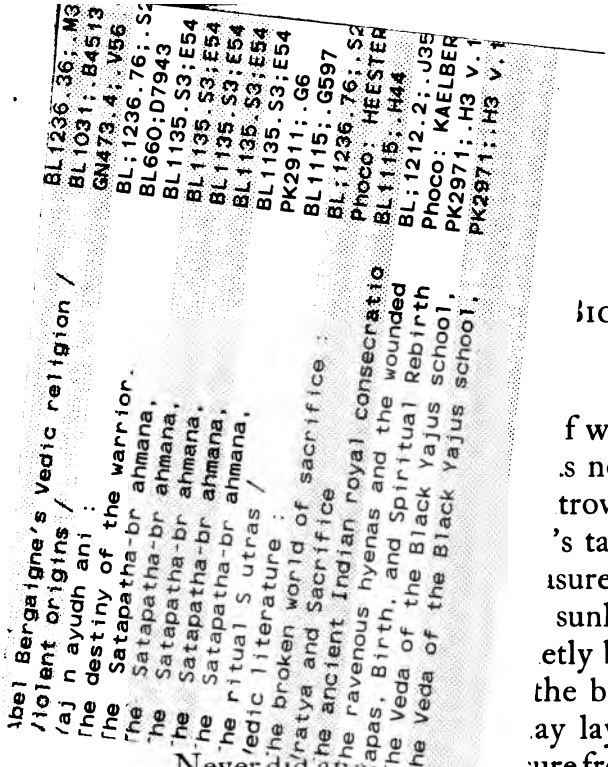
To come back to my point of beginning: When a good and safe flying-machine is introduced at a price that I can afford, I shall perhaps abandon my bicycle. Until that time, — and I am very much afraid that it will not be in my time, — I shall hold fast to it. I see nothing to compare with it, not even the pneumatic skate-roller, upon which experts in England are said to have made as high as twelve miles an hour upon a fair road. How about hills? The slightest rise in the road must compel the foot bicyclist to take off his skates, and carry them over his shoulder.

I shall hold fast to my pneumatic "Safety," thanks to which I have enjoyed scores of days that live in the memory. The bicycle tempts one out-doors. There is something about bicycling and tennis-playing that enables one to enjoy either when the mercury rises to a point where all other exercise seems forbidden. Upon days when I should hesitate to take out a horse, I have enjoyed a quiet turn upon my wheel. There is an independence about it that one doesn't feel in driving.

Keep a note-book, and when your summer's tour is over, count up how many glorious days, how many bits of scenery and of adventure, are well worth remembering. It is only from the top of a hill that one gets all there is of beauty in a fine sunset. Sometimes, when belated, I have enjoyed from my wheel pictures of the dying day so glorious, bursts of color so resplendent, as to make one regret the shortness of life if for no other reason than that such superb triumphs of color have filled the skies before we were here to see them, and will continue to glow for generations after we are gone. To paraphrase Mr. Gilbert's "Pooh Bah," there will be sunsets without end; we may not see them, but they will be there.

To wheel quietly up and down hill and across the valley, miles away from so-called civilization, and yet knowing that with a good bicycle miles mean but little; to wheel along, drinking in the perfumes of the morning with the songs of the birds, and at even, thankful for the matchless glow in the west and the music of the cow-bells, to wheel silently at sunset into some peaceful village where your guide-book bids you expect a welcome, — and at reduced rates, — all this is worth cele-

brating. The use of travel, says Dr. Johnson, is to regulate the imagination by reality. Thanks to the bicycle, we have the joys and benefits of this discipline almost without cost, and without the fatigue incident to prolonged tramps on foot.



BICYCLE

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Never did an athletic pastime come into popularity at a more fitting time than cycling has to-day, when a heavy burden of work is laid on all the sisterhood, whether to do good, earn bread, or squander leisure; no outdoor pastime can be more independently pursued, and few are as practicable as many days in a year. The one who fain would ride, and to whom a horse is a wistful dream, at least may hope to realize a wheel. Once purchased, it needs only to be stabled in a passageway, and fed on oil and air.

The first women cyclists of New York City seemed to rise in a heroic handful from the earth near Grant's tomb, on Riverside Drive. That was years ago. To-day, on the broad western highway of the city a dotted line of riders, men and women, forms a fourth parallel to the dark band which the Palisades stretch across the sky, the Hudson's silver width, and the white thread of flying smoke from the trains beside the river. They ride from the first day of spring to the last privileged days of frosty winter. They ride from morning to high noon, and their lanterned wheels purr by with the gleam of a cat's eye through the dark. A moon sends hordes of their queer cobwebby shadows scurrying over the ground. In the revolving years, to the eyes of those whose windows overlook the wheelways, the woman cyclist has ceased to be a white blackbird. The clear-eyed, vivified faces that speed by give no clew to the circumstances of the riders, but inquiry shows that many callings and conditions love the wheel. The woman of affairs has learned that an hour, or even half an hour, may be stolen from the working day, with profit to both woman and affairs. Now and again a complaint arises of the narrowness of woman's sphere. For

such disorder of the soul the sufferer can do no better than to flatten her sphere to a circle, mount it, and take to the road. An hour of the wheel means sixty minutes of fresh air and wholesome exercise, and at least eight miles of change of scene; it may well be put down to the credit side of the day's reckoning with flesh and spirit.

Correct Position.

Like all costumes, the regimentals of the wheel are affected by locality and racial prejudice. An American skirt found itself in a conspicuous minority in France, and resigned, accordingly, in favor of a pair of national culottes, — excellent things for the breakneck hills of Normandy! — the culottes crossed to England, and were exchanged for a short corduroy skirt with high leggings. The corduroy skirt and leggings journeyed to Toronto, where the roads

are flat and smooth as a billiard table, and the ministers as conservative as eloquent. To escape becoming an object of reproach, the short skirt of the mother country was lengthened to the standard of the colonies. Returning to New York, the Toronto compromise took several tucks in itself in order to conquer the V-shaped roads of Gotham.

In cosmopolitan New York the eye of the spectator has long become wonted to costumes of all kinds. Bloomer and tailor-made alike ride on unchallenged; tunicked and gaitered Rosalinds excite no more comment than everyday people in every-day clothes. Knickerbockers and the skirt composed of twin filibegs have their advocates; Pinero's youngest Amazon has set a pretty fashion for the girl cyclist, and many riders make their records in the conventional walking-dress with cone-shaped skirt worn over the silk trousers of an odalisk, or the satin breeks of an operatic page. No one costume may yet claim to represent the pastime, for experiment is still busy with the problem; but the results are in the direction of simplicity and first principles. So far the large majority of American women have declared in favor of the skirt in one form or another. Short

rides on level roads can be accomplished with but slight modification of ordinary attire; and the sailor-hat, shirt-waist, serge-skirt uniform, is as much at home on the bicycle as it is anywhere else the world over. The armies of women clerks in Chicago and Washington who go by wheel to business, show that the exercise within bounds need not impair the spick-and-spandy neatness that marks the bread-winning American girl. On the excursion a special adaptation of dress is absolutely necessary; for skirts, while they have not hindered women from climbing to the topmost branches of the higher education, may prove fatal in down-hill coasting; and skirts, unless frankly shortened or discarded, must be fashioned so as to minimize the danger of entanglement with the flying wheel.

The pastime does not lend itself to personal display; and in criticism the costume must be referred, not to the standards of the domestic hearthrug, but to the exigencies of the wheel, the rider's positions to the mechanical demands of the motion. Accordingly, the cyclist is to be thought of only as mounted and in flight, belonging not to a picture, but to a moving panorama. If she ride well, the chances

are she looks well; for she will have reconciled grace, comfort, and the temporary fitness of things.

Regarding bicycling purely as exercise, there is an advantage in the symmetry of development it brings about, and a danger in riding too fast and far. The occasional denunciation of the pastime as unwomanly is fortunately lost in the general approval that a new and wholesome recreation has been found, whose pursuit adds joy and vigor to the dowry of the race.

Correct Position.

Having reached these conclusions, the onlooker is drawn by the irresistible force of the stream. She borrows, hires, or buys a wheel, and follows tentatively. Her point of view is forever after changed; long before practice has made her an expert she is an enthusiast, ever ready to proselyte, defend — or ride!

There is full opportunity in and about

New York City for the daily hour with the wheel. From Christmas to Christmas Central Park is a favorite haunt of the cyclist when the weather is kind; and indeed a fine frenzy once set rolling the eye of a poet, who told of a wintry flight among snow-laden pine-trees over sheets of frozen snow. It sounded like a Norse Saga; but the scene was Central Park, the steed a wheel, and the story true. River-

A "Scorcher" — Wrong Position.

side Drive and the Boulevard offer fair roads and a breeze coming fresh from the sources of the Hudson, untainted as it sweeps by Albany; the historic ground of Washington Heights is practicable as well as picturesque, for the Father of his Country outlined a clear march for the city's

gigantic stride; Washington Bridge is a fine objective point, where the rider will surely dismount to rest in the embrasure of the parapets, and admire the view up and down stream where the little Harlem wriggles along between its high green banks. For the longer ride, by crossing Madison Avenue Bridge a wheel-worthy road leads to Westchester and Mount Vernon. There is a ferry at Fort Lee, and a good road even in New Jersey, skirting the trap-rock battlements at whose base the Hudson lies like a broad moat. People who return from Tarrytown speak rather boastfully of the hills.

Far-reaching dreams of summer may bear the traveller of the wheel through clean stretches in the Berkshires, on sunny lanes of Normandy, among Welsh mountains, or down Roman roads between English hedgerows; but all the workaday year there are highways radiating from the heart of the city to the borderland of the country, where one may breathe new inspiration for the world, — the world that we persist in having too much with us in the getting and spending efforts that lay waste the powers.

SPINNLIED.

FOR GRETCHEN ON THE WHEEL.

GOOD health to all, good pleasure, good speed,
A favoring breeze — but not too high —
For the outbound spin! Who rides may read
The open secret of earth and sky.

For life is quickened and pulses bound,
Morbid questionings sink and die,
As the wheel slips over the gliddery ground,
And the young day wakes in a crimson sky.

Oh, the merry comradeship of the road,
With trees that nod as we pass them by,
With hurrying bird and lurking toad,
Or vagabond cloud in the noonday sky!

Oh, the wholesome smell of the good brown earth
When showers have fallen for suns to dry!
Oh, the westward run to the mystic birth
Of a silver moon in a golden sky!

Good health to all, good pleasure, good speed,
A favoring breeze — but not too high —
For the homeward spin! Who rides may read
The open secret of earth and sky.

III. A Doctor's View of Bicycling

By J. West Roosevelt, M.D.

WHEN a person whose muscular system is not already well developed by other exercise begins riding the bicycle, he will probably be surprised to find (unless the various bruises incidental to his first attempts are painful enough to mask all other aches), that the stiffness and soreness due to the unaccustomed work are not confined to the legs, or even the region of the hips. Probably he has more discomfort in the thighs than anywhere else; but he soon learns that it is well to avoid too sudden movements of the whole body, for they cause not a little pain in various unexpected parts of the trunk, and especially in the loins and between the shoulder-blades. He discovers, also, that a number of muscles in his arms and shoulders and chest are more or less stiff and sore. In this painful way is it demonstrated to him that cycling should not be regarded as an exercise of the legs alone.

At Rest—Muscles of Arm, Body, and Neck Relaxed.

Observations by experts show that it is not only the legs which are developed by wheeling. In previously sedentary persons a considerable increase in the circumference of the chest takes place, the increase often amounting to one or two, and sometimes even three, inches. The arms and forearms also grow firmer, and it is said that in them also quite a marked increase in size has been seen. The muscular system everywhere in the body also improves in tone.

It is easy to see why cycling increases the strength of the legs. It is also easy to see why the chest measurement should be increased as a result of the deeper and more rapid breathing. Not only do the

respiratory muscles become stronger and larger, but also the joints and cartilages of the ribs move more easily and more freely, because they have been made more limber by use. I do not know of any investigations which may have been made to determine whether or not there is any increased mobility of chest (i.e., extent of expansion and contraction), as a result of bicycle exercise; but it is almost certain that such studies would demonstrate its existence.

In Action — Muscles of Neck, Shoulder, Arm, and Upper Parts of the Body Contracted.

The muscles which we have been considering are all directly "exercised," as the word is usually understood, since they all contract and relax more frequently and more forcibly than when a person is either

at rest or doing very little work. I have said that the power of muscles not directly (or rather not visibly) employed is also increased. There are two reasons for this. One is that exercise, if not excessive (and especially exercise which is pleasurable, and which is taken in the open air), almost always makes the appetite greater, the digestion completer, the heart stronger, and the circulation better; there is a generally improved tone in every organ of the body, simply because all are better and more abundantly fed, including the muscles, both those which are actively used and those which are not. The second reason for the increase of power and size of many muscles which are not connected with the lower extremity, and which the superficial observer would think were not called into play in bicycling, is that they really are in active use, although they appear to be at rest. For example, a large number are concerned in maintaining the equilibrium, so that the wheel does not fall sideways. This requires at times only a perfect balance of the forces of opposing muscles, and at others enough contraction of some of them to shift the weight by inclining the body to one side or the other. Others fix the lower portion of

A Side View of A. A. Zimmerman in Racing Position on a Wheel of his own Design.

the spine and hip-bones so as to enable the great thigh-muscles to work effectively. In the arms and forearms very delicate adjustment is required in steering; and when hill-climbing or increased speed demands it, a great deal of force is expended by the arms in the firm grip and strong upward pull on the handles which counteracts the strong downward push on the pedals.

Rear View of Zimmerman — At Rest.

There is one muscular structure which bicycling, like every form of physical exertion, compels to do extra work, — the heart; and upon its integrity depend not only health and physical vigor, but also life itself. It has often been asserted that wheeling is apt to injure the heart. Is this so? I can only say that, theoret-

ically, it is impossible for such harm to result in sound people, save from attempts to attain a high rate of speed, or from prolonged and fatiguing rides, or from climbing hills which are either very steep or very long; and practically I have been unable to find authentic records of any case in which heart disease has been caused by the use of the wheel in a sensible and moderate way. It may be added that, in the opinion of a number of physicians of great ability, the existence of organic heart disease does not always debar cycling. Indeed, the wheel is actually recommended by some as a valuable aid in the treatment of certain affections of this organ. There is a striking resemblance between bicycling and walking, so far as their effects on the heart are concerned: either may be healthful or harmful. Excessive exertion in either is dangerous, and moderate exertion is beneficial. That cycling is *more apt* to do harm than walking, can hardly be denied; there is much more temptation to ride than to walk too fast on the level; and the hill-climbing on the machine, even at a moderate speed, is far more of a strain than walking up the same hill at a speed proportionately moderate, and very few people

seem to have sense enough to get off and walk when going up hills. It is safe to assert that for a person capable of acting with common-sense no harm will come from either; and certainly no more from one than from the other. If either in wheeling or walking shortness of breath is felt, one knows that an unwonted strain has been thrown upon the heart and lungs; and the intensity and duration of the breathlessness fairly measure the degree of strain. It is safe to assume that if neither shortness of breath nor palpitation of the heart be felt, the strain is not excessive.

*Rear View of Zimmerman—In Action.**

* The pressure upon the right pedal, accompanied by strong contraction of the muscles of the right side, is especially well-marked near the shoulder.

A physician who has given much thought to the subject says that so long as the cyclist can *breathe with the mouth shut*, he is certainly perfectly safe so far as heart-strain is concerned.

It has often been asserted that cycling is injurious to women. There is a little truth in the assertion. Paraphrasing one of Lincoln's sentences, I would modify it, and say that cycling is harmful to *some* women *all* of the time; to *all* women *some* of the time; but not to *all* women *all* of the time. There is no reason to think that a healthy woman can be injured by using the wheel, *provided she does not over-exert herself by riding too long a time, or too fast, or up too steep hills; and provided she does not ride when common-sense and physiology alike forbid any needless exertion; and provided, also, she does not get the bad habit of stooping over the handle-bar;* and there *is* reason not merely to *think*, but to *know*, that many women are greatly benefited by the exercise. There are certain anatomical and physiological peculiarities which make it far more dangerous for a woman than for a man to undergo excessive physical strain; but if she be careful to avoid strain, cycling is both beneficial and safe for any woman who is free from organic disease.

The same may be said of men and children, and adolescents of either sex. If no organic disease exists, bicycling in moderation tends to increase strength and improve health, except in persons who find by practical trial that every ride, no matter how short and easy, is followed by a feeling of exhaustion. I do not mean merely a rather comfortable sense of fatigue; I mean a weariness which is painful. Human beings are not all built alike; and there are some people who, although they seem to be in good health, and to possess not a little physical strength, ought not to ride the wheel, simply because, for some unknown reason, they are not able to ride without injuring themselves. There is some peculiarity about their body machinery which forbids its use in this particular way.

There is one bad habit into which many wheelmen have fallen (or perhaps one ought to say "slouched"), which calls for sharp condemnation, for reasons partly medical and partly æsthetic. There is absolutely no reason for stooping over the handles in either of the two ways so commonly seen, — and there is no excuse for so doing, — in ordinary road-riding. It may be necessary for the "scorcher," when engaged in

"scorching," to assume the one or the other of these attitudes, — to sprawl with the body straight, but almost horizontal, and the head close to the handle-bar, or to bend the upper part of the back as if trying to break it in its middle, and throw the shoulders forward as if desiring to make them meet across his breast. Even so, one who is not "scorching" does not need to make himself a hideous object to look at, and also to reduce the benefits of wheeling to a minimum, so far as its effect on the chest capacity is concerned.

When high speed is attempted, the body must be bent forward, and the handles must be low. The stooping posture reduces the surface exposed to the resisting air, and also makes possible the effective use of many more muscles than can be used when the cyclist sits erect, as do those on pages 211 and 216. The picture on page 225 is from a photograph of A. A. Zimmerman. It shows that wonderful rider in the position assumed by him when making his record-breaking speed. There is something singularly graceful about the curve of the spinal column, and the position of the arms and shoulders. It is the grace which comes from evident power. On page 217 is depicted a "scorcher" of

the ordinary type. He is simply a hideous caricature of the real athlete,—a man who does not know how to use his muscles engaged in a futile effort to look as if he did.

SURF AND SURF-BATHING

By Duffield Osborne

THE popularity of surf-bathing as a sport may be said to be of fairly recent growth in this country. Although few, perhaps, realize the fact, it is nevertheless true that most of the beaches where now the surf curls over networks of life-lines, and where the brown-faced bathing-master lounges, lazy, yet watchful, before hundreds of gayly clad pleasure-seekers, were solitudes but a few years since. The white-topped waves tumbled one after another, unnoticed upon the gray shore; the sea-breeze played only with the rank grasses upon the dunes; while circling gull and tern screamed their confidential communications to each other without

fear of being overheard by human eavesdroppers.

Only on Saturdays, at the hour of full tide, did the scene change; and then perhaps a farm-wagon or so rolled heavily down to where the ripples lapped the sand; a stout rope was drawn from its coil under the seats, and tied firmly around the hub and axle; a dilapidated fish-house lent itself for a change of garments, and finally some bronzed ex-whaler, with his bulky strength robed in a flannel shirt, and old trousers tied with ropes at waist and ankles, slipped his wrist through the hand-loop at the free end of the rope, and dragged it out into the surf,—a sort of human anchor-buoy,—while women, children, and less sturdy manhood clung to its now tightening, now slackening length, and sputtered and shrieked over their Saturday bath.

But, passing at a bound from farm-wagon, hand-looped rope, and ex-whaler to the less picturesque, but more effectual, appliances of to-day, the following is by all odds the simplest and best: Two parallel ropes, firmly anchored, and so elevated from the shore as to lie along the surface of the water, are run out to two heavy log-buoys, also anchored, at a distance of seventy-five yards, more or less, according to the char-

acter of both beach and surf. Half-way from the shore to the buoys these ropes should be connected by a transverse line, with cork-floats fastened at regular intervals, the distances being such that the cork-line shall rest upon the water some yards beyond the point where the heaviest breakers comb. If placed closer in-shore, it is likely to become a source of serious danger; for diving beneath a heavy wave, and coming up under, or perhaps being thrown with more or less force against, a taut rope or a rough cork-buoy, has been the occasion of many painful hurts; and serious injury can be very readily imagined.

Regard being had to the above caution, this system of life-lines is really safer than much more elaborate contrivances. Women, children, and the inexperienced in general should keep within the rectangle formed by the shore, the long ropes, and the cork-line; and they would, moreover, do wisely to stay near that rope, lying upon the side from which the surf may "set." Then, if swept off their feet, the chances are all in favor of their being carried within reach of some support which will keep them up until assistance can be had. It seems hardly necessary to say that any such

complication of lines as is seen at some points of Coney Island, for instance, would be a danger, rather than a safeguard, in any surf heavy enough to "throw" a bather.

A word as to bathing-costumes may be of some service here. A man's suit should be of flannel, because that material is both warm and light; it should be made in one piece, sleeveless, reaching just to the knee, belted in at the waist, and, above all, close-fitting.

. . . . .

Figure 1.

There are few, nowadays, who do not appreciate the privilege of playing with the Atlantic Ocean; but perhaps there are fewer still who have ever taken the trouble to study the character and humors of their playmate — for he is full of tricks, this same ocean, and his jests are sometimes sadly practical. He is all life and good spirits, the jolliest of jolly company, when he is in the humor; but he must

be treated with tact,—tact born of a knowledge of his ways and moods; and, above all, his would-be friends must learn to recognize when he is really angry, and then they must leave him to rave or grumble alone, until boisterous good-nature resumes its sway.

Watch and note the character of the surf and the formation of the beach for a few days; the knowledge gained may be useful. Do you see that line of breakers a quarter of a mile away? There lies the bar; and to-day the surf is heavy enough to break upon it, though the depth there must be at least six feet. Sometimes it is shallower; and, if you are ambitious and —foolish, you can wade and swim out there, and meet the waves first-hand. It is not worth while to run the risk, though: the seas will usually form again long before they reach the shore; and, if you are sensible, you can enjoy them fully as much here as if you had put several hundred yards between yourself and help in the always possible contingency of accident.

No, it is not remarkably rough now; but last week! you should have been here then. There had been great tumults far out beyond that smoke you see floating above the horizon, where some hidden

steamer is ploughing her way through blue water; and the great seas rolled and tumbled upon the bar and broke there, but they had no time to form themselves again. Plunging onward under their own impulse, and beaten out of shape by fiercely thronging successors, they rushed in toward the shore, a seething turmoil of foam, sweeping the sand from one side, and heaping it up on another, — all white above and gray below from bar to beach. Next week there may be scarce a ripple; you would not know there was an outer bar; and the wavelets, as they lap the sand, will seem so placid that you cannot conceive how they could ever have lost their temper.

In spite of all its changes, however, the surf has sometimes local characteristics as fixed as anything can be with which the fickle ocean has to do. For instance, on the Atlantic coast the storms are generally bred and nurtured in the east; the milder weather is born of southern or western winds, and therefore it is that those who have spent much time upon the New Jersey beaches have probably noticed that during very heavy weather the waves, as a rule, roll straight upon the shore; while when the surf is lighter it is apt to run

diagonally, or, as they say, "sets" from the south. On the Long Island coast all this is reversed; there, when the storm-winds prevail, the "set" is strong from the east, and the foam and breakers race along the beach from Montauk toward the Metropolis; while at other times the surf will usually run straight on. It is hardly necessary to say that a surf without "set" is far more agreeable, and somewhat safer. A bather is not forced to fight constantly against the impulse that is drifting him down the beach and away from companions, ropes, and bathing-grounds.

Figure 2.

The strength and height of the waves depend mainly upon influences at work far out upon the ocean; but the beach, as shaped by its watery assailants, reacts upon them in turn. The finest surf will

be found under the following conditions: First, let there be a storm well out at sea, sending the big rollers straight onto the beach, and then a sharp wind off-shore for a few hours. The effect of this will be, in the first instance, to thin the waves; and he who is fortunate enough to make trial of them under such circumstances will find a high, clean-cut surf, each breaker of which combs over in even sequence, and yet without such weight or body of water as to seriously threaten his equilibrium. Should that same wind off-shore blow for a few hours longer, the tops of the waves will be cut off, and the ocean become too calm to be interesting.

I speak of a "fine surf;" but were each man asked what he understands by it, or by the term "good bathing," his definition would probably be largely governed by his skill and ability to take care of himself. For instance, what would be highly satisfactory to a good surfman would be altogether too rough for those compelled by weakness, timidity, or inexperience to stand near the shore and look on; while what might be agreeable to them would be tame for him. The opinion of such as say, "Wasn't it splendid to-day! Why, I swam way out to the bar," need not

be considered. *They* don't enjoy surf-bathing; it is only the swimming that they care for, and they would doubtless be even better pleased at any point on Long Island Sound. But what I take to be, and what I mean by, "a good bathing-day," is one on which a man who understands himself can take the surf as it comes, either alone or "with convoy," and yet, when there is an ever-present excitement in the knowledge that a second's carelessness may result in an overthrow of both his person and his pride.

Turning now from the water to the beach itself, we find its formation varies from day to day and from year to year, almost as much as do the waves that are forever smiting it. It may deepen gradually or abruptly; and the shoaling of an abrupt beach is usually the result of some days' heavy sea "setting" from one direction or the other, which cuts away the sand above low-water mark, and spreads it out over the bottom. But that characteristic which at the same time varies and affects us most is the position and depth of what is known as the "ditch;" that is, where, sometimes at a few feet, sometimes at several yards from the shore, will be found a sudden declivity caused by the

continual pounding of the surf along one line, and consequently lying farther out in heavy weather, and conversely.

As a source of danger this same "ditch" is often very material. Often a man ignorant of the surf, perhaps a poor swimmer, or no swimmer at all, starts to wade out waist- or breast-deep. To his eyes there is no sign of peril — one step more, and lo! he is beyond his depth; and that, too, just where the waves are pounding him down, and the conditions most potent to deprive him of his much-needed presence of mind. Nor is this all. He may not, of his own free will, take that last step which involves him in all this difficulty, for it is at the edge of the "ditch" where the "undertow" is strongest; nay, more, the very strength of the "undertow" depends largely upon the depth of the ditch.

Doubtless we have all heard a great deal about this "undertow," as though it were some mysterious force working from the recesses of a treacherous ocean to draw unwary bathers to their doom. As a matter of fact, its presence is obviously natural, and the explanation of it more than simple. As each wave rolls in and breaks upon the beach, the volume of water which it carries does not remain there and sink into

the sand: it flows back again; and, as the succeeding wave breaks over it, the receding one forms an undercurrent flowing outward of strength proportionate to the body of water contained in each breaker, and, again, proportionate in a great measure to the depth of the ditch. Where this latter is an appreciable depression, it can be readily seen that the water of receding waves will flow into it with similar effect to that of water going over a fall, and that a person standing near is very likely to be drawn over with it, and thus, if the ditch is deep enough, carried out of his depth. This is all there is to the much-talked-of "undertow," and the numerous accidents laid to its account.

It may be well to speak here of another phenomenon not infrequently observed. I do not recall ever seeing the name by which it is known in print; and, as the word is ignored by Webster, I shall invent my own spelling, and write it "sea-poose." This term is loosely used on different parts of the coast; but the true significance of it is briefly this: There will sometimes come, at every bathing-ground, days when the ocean seems to lose its head, and to act in a very capricious way. On such occasions it often happens that the beach is cut away

at some one point, presumably where the sand happens to be softer and less capable of resisting the action of the water. There will then be found a little bay indenting

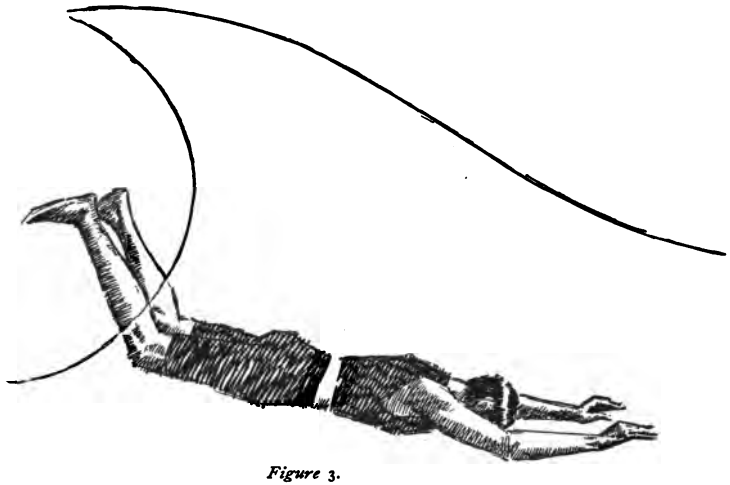


Figure 3.

the shore, perhaps ten feet, perhaps ten yards. The waves rolling into such a cove are deflected somewhat by its sides, and "set" together at its head, so that two wings of a breaker, so to speak, meet, and, running straight out from the point of junction, form a sort of double "undertow," which will, if the conditions that cause it continue, cut out along its course a depression or trench of varying depth and length. It can be readily understood

that such a trench tends to strengthen the current that causes it; and these two factors, acting and reacting upon each other, occasion what might be called an artificial "undertow," which is sometimes strong enough to carry an unwary bather some distance out, in a fashion that will cause him either to be glad he is, or to wish he were, within the rectangle of the life-lines.

I have sometimes heard old surfmen speak of what they call a "false poose;" but I have never been able to find out just what was meant by the expression, much less its causes and character. I shall, therefore, leave the question for those who delight to delve into the mysteries of local nomenclature.

. . . . . .

And now, standing upon the dunes, our eyes have wandered over the expanse of ocean with a glance more critical and inquiring as it drew near the shore. The salt savor of the breeze is at the same time a tonic and an anodyne; we are drowsy, but the sea yet draws us to itself with an irresistible impulse. The waves are rolling straight in, and breaking high and clean. Shall we plunge into their cool depths? Shall we combat their strength,

or ride them as they come galloping from the blue to the green, and from the green to the white, until at last they fall spent upon the gray sand of the beach? Surely! Who is there can stand by and resist such temptation! But wait! Surf-bathing is not a solitary sport. See! the beach is thronged with gay toilets and bright sunshades, and the water has already given place to many. Watch that couple as they run gracefully down to the shore. They dash confidently out; now they have almost reached the line where the waves are breaking; he takes her hands, and they stand prepared to "jump" the breakers — and then! and then a big, foamy crest curls over them, and falls with a roar; and, as it rolls in, you think you see a foot reaching up pathetically out of its depth, and now a hand some yards away, until at last, from out the shallows of the spent wave two dazed and bedraggled shapes stagger to their feet, and look, first for themselves, and then for each other. A broad smile runs along the line of pretty toilets, and the gay sunshades nod their appreciation. There stand some men, just where the breakers comb; and, as each wave succeeds its precursor, and rises into a crest, you may see the half-dozen brown-

armed figures shooting over, like so many porpoises, and plunging head foremost under the advancing hill of water. Look! there come some big ones — one, two, three of them! The bathers see them, too, and press out a few yards into deeper water; and then the diving commences. It is sharp work this time; the big ocean-coursers are running close upon each other's heels, and the heads scarcely emerge after the first before the second is curling directly above; now they have passed, and each breathless bather looks around to see how the rest have fared — three, four, five — but where is the sixth? A roar of laughter floats shoreward as a demoralized form is seen to gather itself up, almost upon the beach; that last breaker of the trio struck too quickly for him. He cannot tell you just how many somersaults he has turned since the ocean proceeded to take him in hand, but he is sure that they must have numbered somewhere among the

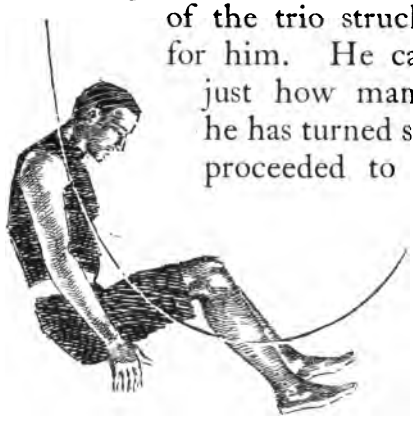


Figure 4

twenties. Yes, it is brisk sport, and we must "go in."

But then it does not look comfortable to be thrown; nor will it please our conceit to so minister to the good-natured mirth of that gay company. It is pleasanter to be among the laughers; and so we shall be. To that end a few hints will perhaps be found useful; and even though what I shall say may, when said, seem to be obvious enough, yet it is amazing how few people will of themselves perceive the obvious, and utilize their perceptions. You, my scornful friend, who think you know it all, you will go to Southampton next summer, and, — the spirit of prophecy being upon me, — you will be thrown, ignominiously thrown, eight times inside of two weeks; so remember that much that is "obvious" is yet fairly occult after all, or at least might as well be, as far as practice is concerned. And now to return to the ocean and to didactics.

We shall assume, in the first place, that you are able to swim; and further, that you are not minded to follow the inglorious, yet really dangerous, example of those who wait for a calm interval, and then, rushing through the line of breakers, spend their time swimming out beyond.

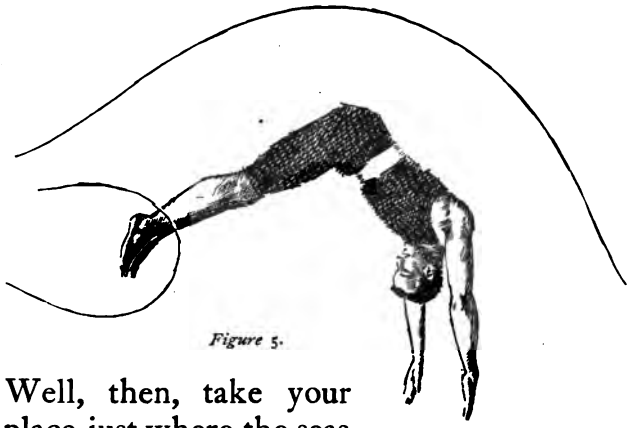


Figure 5.

Well, then, take your place just where the seas comb. This point will vary somewhat with the height of the waves; but you will stand, for the most part, in water about waist-deep (as shown in Fig. 1). Should a particular breaker look to be heavier than the preceding, remember that it will strike farther out, and that you must push forward to meet it. Then, if you are where you should be, it will comb directly above your head. Wait until it reaches that point of its development (for if you act too soon or too late your chances of being thrown are greatly increased), and, with the white crest just curving over you, dive under the green wall of water that rises up in front. Dive just as you would from a low shore, only not quite so much downward, — say at an angle of twenty degrees off the hori-

zontal (Figs. 2 and 3), your object being to slip under the incoming volume of water, to get somewhat into the "undertow," and yet to run no risk of running afoul of the bottom. The heavier the wave, the deeper will be the water in which you stand, and the deeper you can and should dive. If your antagonist be very big and strong, you will find it advisable to strike out the instant you have plunged, very much on the theory that as a bicycle will stand when in motion, and fall the instant it stops, so a man can, by swimming under water, keep control of and balance himself much better against the peculiar vibratory motion which one experiences when under a big wave, and surrounded by conflicting currents. Swimming will also tend to bring you to the surface again under full control; and, provided you have acted with judgment, you will find yourself, when the wave has passed, standing on about the line from which you plunged.

A thing good to remember, but difficult to explain the cause of, is, that extraordinarily heavy waves almost invariably travel by threes; that is, very often, when you have been standing at one spot, and taking perhaps a dozen breakers, you will of a sudden see, rolling in from the bar, a hill of

water and foam much higher and heavier than those that have gone before. Then be sure that there are two more of similar magnitude close behind it, and push forward as fast as you can. If it seems *very* heavy, and you have time, you may try to get beyond the break, and ride them in comfort; but if this is impossible, you must dive low, swim, come to the surface promptly, dash the water from your eyes, and be ready for numbers two and three; and when all have passed, if you are still in good shape, you will find some long draughts of air very agreeable.

Sometimes it will happen that you cannot get far enough out in time to meet these big seas at the proper point; and then it is that your reputation as a surf-man will be in danger, at least among those who judge by suc-

Figure 6.

cess alone. There is only one thing to do: dive under the foam as it boils toward you — *dive deep* and *swim hard.* The wave and the "undertow" will be here commingled in a sort of whirlpool, and you will need all your strength and skill to keep "head on." Suffer yourself to be twisted but a few inches from your course, and — but doubtless you understand.

Figure 7.

There is a rather amusing way of playing with the surf on days when it is fairly high, but thin, and without much force. Instead of diving as the breaker commences to comb, throw yourself over back-

ward, and allow your feet to be carried up into its crest. Provided you have judged its strength accurately, and given yourself just enough back somersault impetus, you

Figure 8.

will be turned completely over *in the wave* (Figs. 4 and 5), and strike with it, and upon your feet; only, be careful in picking out your plaything, and don't select one that will pound you into the sand, or perhaps refuse to regulate the number of somersaults according to your wishes or intentions.

. . . . . .

Now, it is more than possible that, being a good swimmer, and having first made personal trial of both beach and surf, you may desire to offer your escort to — well, to your sister; and right here let me note a few preliminary cautions: —

Never attempt to take a woman into the surf where there is any reason for an experienced surfman to anticipate a sea which, unaccompanied, you would have any difficulty in meeting; or

When the water in the ditch is more than breast-deep; or

When the "undertow" or "set" is especially strong; or

When there is any irregularity of the beach which might cause a "sea-poose" to form.

You may also find it wise to observe the following: —

Never take a woman outside the life-lines, and never promise her, either expressly or by implication, that you will not let her hair get wet. Above all, impress it upon her that she must do exactly as you say, that a moment's hesitation due to timidity or lack of confidence, or, worse than all, anything like panic, or an attempt to break from you and escape by flight, is likely to precipitate a disaster which, un-

Figure 9.

pleasant and humiliating when met alone, is trebly so in company.

And now, having read your lecture on the duty of obedience, etc., lead on. Of course, if the water deepens gradually and the surf is very light, you may go beyond the breakers; but in that event no skill is called for, and no suggestions needed.

There are several good ways of holding a woman in the surf, but the best and safest in every emergency is that shown in Fig. 6. You thus stand with your left and her right side toward the ocean; and as the wave rises before you, your com-

panion should, at the word, spring from the sand, while at the same moment you swing her around with all your force, and throw her backward into the advancing breaker (Fig. 7). You will observe that your own feet are always firmly planted on the bottom, the left foot about twelve inches advanced, and your body and shoulders thrown forward, so as to obtain the best brace against the shock of the water. The question of preserving your equilibrium is largely one of proper balancing, especially when, as is often the case, you are carried from your foothold, and borne some yards toward the shore. Your companion's weight and impetus, as well as the position in which she strikes the wave, — that is, directly in front of you, — all tend to make your anchorage more secure, or, in case of losing it, your balance the easier to maintain. The body of the wave will, of course, pass completely over you (as shown in Fig. 8). The instant it has so passed, and your head emerges, clear your eyes, regain your position (you will practically drop into it again), and if carried shoreward, press out to the proper point, so as to be ready for the next.

Should an exceptionally heavy sea roll in, endeavor to push forward to meet it as

if you were alone, being very careful, however, not to get out of depth. Flight is almost always disastrous. If the sea strikes before you can reach it, there is nothing to do but bend your head and shoulders well forward, brace yourself as firmly as possible, and thus, presenting the least surface for the water to take hold of, and getting the full benefit of the "undertow," swing your companion (who has also bent low and thrown herself forward) horizontally under the broken wave (Fig. 9). If she has had much experience, it will be still better for you to dive together, side by side.

Before dropping this branch of the subject, I will call attention briefly to another way of carrying a woman through the surf. Let her stand directly in front of and facing you (as shown in Fig. 10). Standing thus, she springs, and is pushed backward through the wave somewhat as in the former instance (Fig. 11). The disadvantages of this method are: First, that you lose in impetus by pushing rather than swinging your companion; second, that she cannot herself see what is coming; third, that neither is in as convenient a position to hurry forward to meet an exceptionally heavy wave; and fourth, that

Figure 10.

you have not as good a hold in case a sea breaks before it reaches you, or any other emergency arises.

In all that has been said, bear in mind that the cardinal secret of surf-bathing, in all contingencies, is proper balancing, and nothing but experience seconding knowledge can teach you to measure forces and judge correctly to that end.

. . . . . .

So far the sea has been a good-natured, though sometimes a rough, playfellow — never really irritable or vindictive; but unfortunately this disposition cannot be counted upon. That there are dangers attendant upon ocean-bathing, he who has been present when human life was being fought for can abundantly testify. To be sure, most of the "accidents" are results of carelessness or ignorance; but then the same may be said of accidents everywhere, and a short summary of the dangers peculiar to the surf may be of use. Some of these have been already indicated, as, for

Figure 11.

instance, dangers arising from the "undertow." This by itself is not likely to trouble any one except a very poor swimmer, and then only when the ditch is deep; for the reason that the power of the "undertow" is confined practically to within the line of breakers, and cannot carry a bather any distance. In the case of a "sea-poose," however, it is different. I have seen a current of this character running out for many yards beyond a man's depth, and against which a strong swimmer would find it almost impossible to make headway. Fortunately such instances are rare; but he who may be thus entangled must remember, the moment he realizes his predicament, that by attempting to fight the current and swim directly toward the beach, he, as a general thing, only wastes his strength. He must strike out for a few yards along shore; and a slight effort so directed will soon take him out of the dangerous influence.

Again, the "undertow" may help to a disaster in the following way: As a rule, there is no real danger in being thrown by a breaker; but there have been occasions when an inexperienced or exhausted bather has been struck in such a way, or thrown with such force, as to be more or less in-

jured or dazed; and then, before he could regain control of himself, and while prostrate in the water, he has been drawn back by the "undertow," rolled under and pounded down by each succeeding breaker, and finally even drowned.

The great majority, however, of drowning accidents on the seaboard — that is, of those which can be even indirectly attributed to the surf — take place under the following circumstances: Some strong swimmer comes to the beach, entirely ignorant of the strength and ways of the ocean; he sneers at the warnings of surfmen, and, choosing a calm interval, dashes through the line of breakers, and amuses himself by swimming out; ropes and log-buoys are entirely beneath his notice. Finally he begins to feel tired; the chop of the seas splashes up into his nose and eyes; it is not so easy as swimming in still water, and he concludes to come in. Now, the chances are that he will do this without any serious difficulty, even though he does not quite understand how to swim high, with long strokes when on the inner slope and summit of each wave, until it fairly shoots him toward the shore; and then to rest and hold his own while on the outer slope and in the trough. There is

always, however, just a possibility, and the stronger the surf the more possible is it, that the inexperienced swimmer can *not* come through the line of breakers when and where he wants to: he must wait *their* pleasure; and if he has measured his strength closely, and the delay be long, it is easy to see how that, in trying to pass, he may be thrown down into the "undertow," and lack sufficient strength to extricate himself.

Next to caution and life-lines, surf dangers are best provided against by a long rope, with a slip-noose at the end, either wound on a portable reel or coiled and placed at the lowest point of the beach. Then a rescuer, throwing the noose around his waist, can make his way to a drowning man, and both can be drawn in by those on shore. In default of some such contrivance, the next best thing is for all the able-bodied to form a chain of hands; for, let me say, there is nothing more difficult, even for a strong swimmer and expert surfman, than bringing a drowning person in through, or out of, a line of heavy breakers.

I recall an incident which happened some years since at Bridgehampton, Long Island, and which illustrates the difficulty

of which I speak. A young clergyman had arrived only the day before: he was unable to swim a stroke; and his first exploit was to wade out into the ocean, entirely ignorant of the fact that the ditch was that day both abrupt and deep, — or perhaps even that there was such a thing as a ditch, — and that a single step would take him from a depth of four feet and safety, into one of six and considerable danger. Whether he took the step, or the "undertow" took it for him, is not material; but the bathing-master and one other saw the trouble, dashed in, and, reaching the drowning man, were able to keep his head above water. But, what with this and fighting the waves, they could not seem to make an inch shoreward. There were not many on the beach at the time, and only four or five men who could be of any use. A chain of hands was promptly formed, but it was not long enough to bring the inside man into water less than waist-deep; and the "undertow," pouring into the big ditch, sucked with all its might. So they swung backward and forward, now gaining, now losing ground. And meanwhile, the bathing-master and those nearest him, being out of depth, were fast becoming exhausted. All, so far, had instinctively

tried to fight the waves, but it was evident that a change of tactics was necessary; and fortunately at that moment a great ridge of water was seen sweeping in. Thought came quickly then, and the word, "Let it throw us!" was passed down the line; then it struck, and for a moment there was a confused tangle of legs and arms and heads and bodies swirled around, over, under, and against each other. Those closer inshore were hurled upon the beach; but the chain held together long enough to drag the others into a place of safety. Though there were no casualties of any consequence, I am very certain that each link of that chain will not soon forget the experience, and will appreciate the truth of my last statement.

And now let me try to temper all this, by saying that the dangers of surf-bathing are, in reality, much less than those that beset still-water swimming, where one is usually out of his depth, and with very little chance of escape in case of cramp or exhaustion. Only make friends with the ocean, learn its ways, study its moods a little, and humor it, while you keep careful watch against any sudden ebullition of passion. Those who stand aloof can never realize the pleasure and excitement of the

sport they forego; nor shall they know the profound satisfaction born of successfully combating a trio of big rollers, which have tossed companions and rivals in confusion on the beach.

COUNTRY CLUBS

AND

HUNT CLUBS IN AMERICA

By Edward S. Martin

Kennels and Stables of the Rockaway Hunt Club.

ALONG time ago men discovered that by clubbing together they could maintain a town house on a scale of comfort and even luxury which would be very much beyond the individual means of most of them. It was convenient to have such houses, and for more than a century they have been a fa-

miliar feature of the life of great cities. The application of the same principle to the maintenance of a country estate is a matter of comparative novelty, and largely of American development.

The English country house abounding all over Great Britain has apparently made the country club a much less necessary appurtenance to English cities than to ours. The well-to-do and fashionable Briton hies him to town in the spring, and stays there until the summer is well advanced. While he stays in London he is abundantly occupied and amused; and when he leaves, it is to go to his country house or to a watering-place, or to travel by land or sea, or to shoot, or pay a round of visits and get ready for the hunting season. All England is a sort of country club for London, and the lesser British towns are ministered to in like manner by the rural districts about them. Sport has long been a fixed habit of the British people; and for generations provision has been made for it in foot-ball and cricket grounds, in village commons, in shooting-preserves, and in that profusion of hunt clubs which makes it difficult in the hunting-season to ride fifty miles in any direction without coming within hearing distance of a huntsman's horn.

But for the resident of an American city the conditions are different. As long as his town was small and his income limited, the urban American got on well enough. He was too busy adding to his income to have much time for recreation; he had crude ideas about playing; and when he wished to rest his eyes with a sight of the green fields, he could get into his wagon, and drive in a few minutes beyond the limits of paved streets into the country. As his city grew, his income increased, the nervous strain of living increased, the hours of his work shortened, and the strenuousness of his application was aggravated. He began to need more recreation, more country air, more country scenes. If the town he lived in was very big, he sometimes got himself a house in its suburbs; and

The Dining-Room of the Rockaway Club.

whether as urban or suburban resident, he indulged himself more and more in horses. Then gradually the country clubs began to appear. Horse was usually at the bottom of them at the beginning; though bicycle has grown to be horse's rival nowadays, and, allied with golf, disputes his precedence. City people who keep horses for pleasure, or bicycles, want a place to ride and drive to. It must not be too far off, and the roads leading to it must be fit to ride over. Dwellers in suburbs want the same thing; and they want, further, more than city folks, a social centre, where balls can be had and dinners eaten, and where in the late hours of the afternoon, when the men have got back from town, they can get sight of one another, play tennis, polo, golf, or base-ball, and swap conversation, horse-points, and invitations to dinner. One purpose, further, the country club serves,—to make a summer home for bachelors whose business keeps them near town all summer, and for laborious benedicts whose families go farther away than they can follow them. It would seem, then, that there are two species of country club, — the suburban club, which grows out of the needs of the dwellers in a suburb, and that which is devised for the convenience

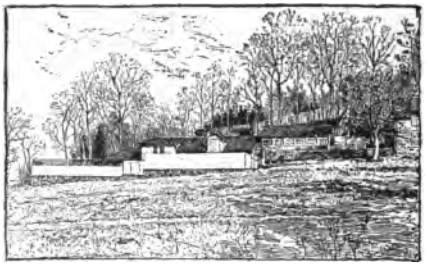
of members who live in town. But, practically, the distinction is not very definite. There must be a city before there can be suburbs. Suburban country places are apt to cluster around a good country club, even if they were not there in the beginning; and a club designed to meet the wants of suburbanites is sure to gain a membership

After a day's run at Cedarhurst—the Rockaway Club.

from city people, who want to share its privilege and enjoy its sports.

Originally, as has been said, the corner-stone of the country club was Horse. When the average American began to find himself master of more money than he required for the simpler comforts of life, one of the first luxuries to which he treated himself was a horse. If he could afford more horses than sufficed for mere convenience, he kept others for pleasure. Time was when the American sole idea of a pleasure horse was a trotting-horse, and every American country town has been used these many decades to provide itself with an agricultural trotting-race track as one of its earliest necessities; but of later years, while the trotting-horse has continued to be a favorite, the taste for other varieties of equine merit has developed. Horses that are good to look at, and to haul carriages handsomely, and to carry riders, have been felt to be worth cultivating as well as horses that are good to go fast. The horse that the country clubs are interested in is the horse that hauls a dog-cart, a surrey, a tea-cart, a drag, or a plain family wagon; the horse that contributes to the perfection of a tandem or a four-in-hand; the horse that can jump a

fence, and run in a steeplechase; and the small but active quadruped that carries the polo-player. In spite of the immense spread of the bicycle, it is still true that wherever you find a country club, you find a centre of interest in all these equine developments. In most country clubs polo becomes sooner or later a prominent sport. It furnishes a very active exercise for the men who play it, and a lively spectacle to the women and children and more prudent men who prefer to look on. It also serves as a summer horse-sport for those organizations which are half country, half hunt clubs, whereby men can get their summer exercise, and put themselves in proper condition for the hunting when it comes. Sometimes country clubs develop out of polo, as the Buffalo Country Club, or the Dedham Polo Club, which latter, though not strictly a country club as yet, serves many of the purposes of one to its members; sometimes polo is merely a development, as in the Country Club of Brookline or of Westchester; and oftentimes polo and country club both develop out of hunt clubs, as is the case with the Myopia Club of Hamilton, and the Meadowbrook and Rockaway Clubs on Long Island.

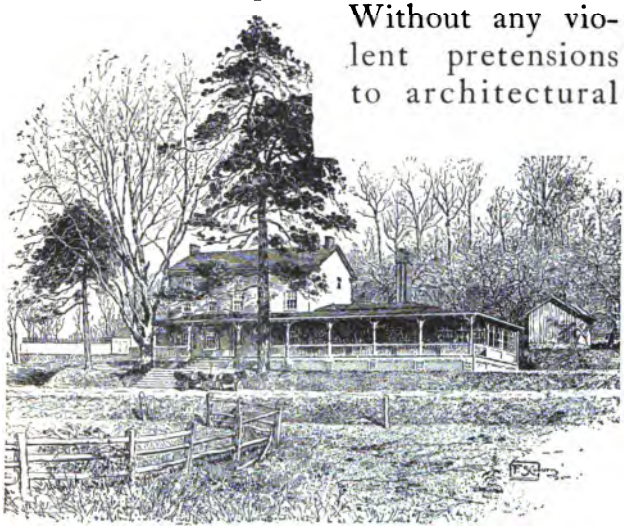


The Radnor Kennels.

The Brookline Country Club is about five miles from the business centre of Boston. Good roads lead to it from all directions, and make it accessible by driving from Boston and most of the suburban cities and villages that environ that fortunate town. The grounds of the club include acreage enough for a half-mile track, a course for steeplechasing, a polo-field, golf-links, and as many tennis-courts as are called for, besides woodland, shaded avenues, and long stretches of lawn. The

A Corner of the Dining-Hall.

club-house, facing the lawns and polo-field, stands back several hundred yards from the street, from which a shaded avenue leads to it. It is the house that was bought with the estate, and enlarged to meet the requirements of the club. Without any violent pretensions to architectural



The Radnor Hunt Club of Philadelphia, quartered near Bryn Mawr.

beauty, it is handsome enough, and has reception-rooms, ball-rooms, dining-rooms, billiard-rooms, bath-rooms, bedrooms, and piazza-room enough for the club's necessities. Its stables are proportionately ample and convenient. Its activities continue all the year round; but as a large proportion of its members get them to the seashore

or elsewhere in summer, its liveliest times are in the spring and fall. Steeplechasing, flat-racing, pony-racing, coursing, and gymkana games are its habitual exercises; and occasionally it holds a sort of blizzard of sport, when a horse-show, a dog-show, or some other sporting spectacle, is provided every day for a week. The activity of its polo-players is continuous all through the season; and golf, which is a godsend to country clubs, has already taken an important place in its activities. It will be seen that this club abounds in what the theatrical managers call "attractions." When anything of special moment offers, its grounds are gay with fair women, brave horses, bicycles, grooms, carriages, and gentlemen; and when nothing in particular is going on, it is still a pleasant place to drive to and get dinner.

What the Brookline Country Club is, most of the other country clubs are, or hope to be, always with such differences as environment contributes. Such clubs as the Essex County, the Catonville, or the Westchester, placed in a centre of summer homes, are liveliest in summer; while the hunt clubs which have country-club features are most active in the fall.

Most of the hunt clubs are the outcome

of the same development of wealth, leisure, and sporting proclivities to which the rise of the country clubs is due.

Hunting in England seems to have grown originally out of the necessities of country life. For centuries the most important form of British wealth was land. All important Englishmen had landed estates; most of them got their chief revenues from them, and most of them lived a good part of the year in one or another of their country places. They had to amuse themselves as they could. The habit of the chase came down to them from remote times; and when they had no wild creature left that was chasable but the fox, they cherished the fox, and duly and diligently pursued him. In some parts of the United States it has happened that, ever since the country was first settled, foxes have been chased by country gentlemen, who needed some active sport to beguile their seasons of leisure. Thus it was in Virginia, so long before the Revolution that, when Lord Fairfax and George Washington kept hounds and hunted them, fox-chasing was an old story to the horsemen of those parts. But our modern American revival of fox-hunting and cross-country riding springs not so much from

the need of beguiling the monotony of the lives of landed proprietors and country gentlemen, as from the necessities and aspirations of city men. Fox-hunting, or even drag-hunting, is an expensive amusement; and though in country districts where it has been started the farmers oftentimes share its excitements and help it on, the revenues of agriculture do not often suffice for its support. In some few exceptional cases the sport has been a true local development of the country hunted; but much more often is it a suburban enterprise, originated and supported by city men who want to hunt, and whose business, if not their homes, is in town. Out of twenty-five American and Canadian hunt clubs, at least twenty have this suburban characteristic. It is partly due to local conditions, and especially to the fact that this is a country of small farmers, who own their farms, instead of landed proprietors and tenant farmers. But it is also a result of that world-wide, contemporaneous tendency which is making all the great cities bigger, and many of the lesser towns great; so that even in Great Britain the two hundred, more or less, hunts which flourish in spite of hard times, doubtless draw a very much more impor-

Start of the Meadowbrook Club at Southampton.

tant proportion of their support from city men than they did twenty-five or even ten years ago.

The city man's desire to hunt is based neither on affectation nor on mimicry. Americans do not hunt foxes or ride across country because it is done in England. The strain of English blood may show itself, perhaps, in American horsemanship; but Americans ride across country because that is a far livelier and more interesting form of riding than riding on the road, even when it is a country road, — much more so when it is a park road or a paved street. And when Americans hunt foxes, they do it for the same reason that the English do,

because following the trail of a fleet and wily animal is better sport than following a cross-country trail artificially laid, and because the fox is the only wild creature fit for the chase that will live and flourish in proximity to man. That the city man, be he Briton or American, should wish to hunt is a reasonable desire. The circumstances of his daily life are such as draw on his vitality and abate his vigor. When once he has put himself in the way of making an adequate living, his physical life is apt to be easy. He gets no taste of cold or hunger and hard physical labor. He is too apt to be overfed and overheated, to drink more than is good for him, to work too hard with his head and too little with his body, to be luxuriously lodged, and generally to be made too insidiously comfortable. He has to fear the debilitating influences of such a life, both on his physique and on his character. His simplest remedy is some sort of out-of-door exercise which involves some self-denial, some exertion, and a reasonable amount of grit. Partly for his liver's sake, partly for his amusement, he gets astride the horse. Then, if he has in him the quality known as sporting-blood, mere horseback exercise presently palls on him. It is too monotonous.

He wants something that will test his horse's capacity and, at the same time, his own nerve. Sometimes he finds it in polo; but unless he is young and ardently athletic, he is apt to find it more to his taste in hunting.

So it is to this desire of men who enjoy many luxuries to add to them one more, that will counteract some of the others, that the recent development of American hunting is largely due. If any hunt is to prosper, it must include among its backers a certain number of men who are prepared to take it seriously. When the hounds go out some one must go with them,—must go rain or shine, whether the spirit moves or not, whether the flesh is willing or otherwise. To keep up a hunt is a laborious business; and there must be in every hunt some members who are willing to take it laboriously when that is necessary, and hold their personal convenience secondary to the demands of sport. Unless the master of the hounds evinces a devotion of this nature, and unless he has one or two colleagues on whom he can rely, the hunt is apt not to prosper. These mainstays of a hunt must be able to command a considerable degree of leisure. If they are forthcoming, and are willing to

spend their strength and money in maintaining the hunt, they will usually win to their support a following of less-determined sportsmen, with less time to spare, who will hunt when they can, pay dues when that is necessary, and lend their countenance and a limited amount of personal support to the enterprise.

New York, which, awaiting the further development of Chicago, is more than any other American city the centre of American enterprises, is, in at least one particular, the most important centre of American hunting. There are more men in New York than in any other one town who want to hunt, who can afford to hunt, and who are willing to take a considerable amount of trouble to do it; and though other cities had hunts long before New York did, no other American city has so many as six subsidiary hunt clubs at her doors. The most noted and important of these six New York hunts is the Meadowbrook. Its pedigree is too much involved for the present writer to trace it with much hope of historical accuracy; but it seems to derive, with more or less indirection, from the Queens County Drag Hounds, organized in September, 1877, by Messrs. Robert Center, W. C. Peat, A.

Waiting for the Word.
(*Meet of the Meadowbrook Hunt at Southampton, L.I., in the Fall of* 1891.)

Belmont Purdy, and F. Gray Griswold, at Meadowbrook, Long Island. These gentlemen or their assigns hunted the Meadowbrook country for three years. Then their pack was removed to Westchester County, and stayed two years. Then it went back to Far Rockaway, Long Island. Meanwhile, Hempstead was occupied by a new subscription pack, which held its first meet in September, 1880, and took the name of the Meadowbrook Hunt. The old Queens County pack, after moving back to Far Rockaway, was joined by,

or merged into, the Rockaway Hunt Club, and still exists under the latter name, with kennels and a club-house at Cedarhurst. One of its founders, Mr. Griswold, was lately master of the Meadowbrook hounds. One of his predecessors in that office was Mr. Thomas Hitchcock, Jr., who hunts a pack of his own in the winter, at Aiken, S.C. The present master is Mr. Ralph M. Ellis. The Meadowbrook Club-house, near Westbury, is a pleasant but unpretentious house, which answers for a sort of country club for the neighboring district. It has a ball-room and ladies' annex, plenty of bedrooms, where some of the members live in summer, ample stables and kennels, and a golf-links. The club has about seventy members, who pay annual dues of $100. Its pack of some thirty-six couple of English hounds is efficient, and well kept up. It hunts in the spring from March until well into May, and in the fall from Oct. 1 until the ground freezes. Occasionally it hunts wild foxes; but it finds so many obstacles to that form of sport that the drag is its main reliance, as it is of all the other clubs near New York. Inasmuch as drag-hunting is generally conceded to be an inferior sport to fox-hunting, it is worth while to consider why all

the hunt clubs near New York prefer it. The reasons for the Meadowbrook's preference are partly local. The woods in the twenty square miles of country the club hunts over are large, and without roads, and the foxes in them can seldom be persuaded to break covert and run over the open country, as well-regulated foxes should. Another important reason, which applies to the majority of the suburban hunt clubs,

Lunch on Race-day at the "Kennels," the Headquarters of the Elkridge, Md., Hunt Club.

is, that at least one-half of the Meadowbrook's members are men of business, who go daily to New York to their work. They get home by an afternoon train, and, by dint of hurrying, gain two or three hours from the working-day, which they can spend on a horse's back. Accordingly, when they get to the meet, at three o'clock or thereabouts, there is not time for an indefinite search after a fox, even if the country were favorable to such a quest. The Meadowbrook men want a sure run whenever they go out. They want it to begin promptly, and to end with certainty in time for dinner. Obviously, therefore, drag-hunting fits their necessities better than fox-hunting. They take the best sport they can get, and make the most of it. What they make of drag-hunting is matter of notoriety on both sides of the salt seas. They ride exceedingly good horses; their hounds are swift, and their pace is fast. The great Hempstead plain, which lies near them, is unfenced, and free from obstacles, an admirable place to gallop or drive over at most seasons of the year. But when they leave that, and strike the neighboring farming-lands, the fences are frequent and strong, of the post and rail variety, and from four to five feet high,

The Start from the Kennels. The Elkridge, Md., Club

with occasional taller ones. Drag-hunting over obstacles of this sort is a very wakeful sport, and only the boldest huntermen on the best nags can hope to find happiness in it. But the Meadowbrook men like it. From twenty to forty riders follow their hounds every hunting-day; and the sport grows more popular, and the club larger, from year to year. Steeplechases are a familiar dissipation of the Meadowbrook men, and occasionally they have them of the point-to-point variety. Like all the hunt clubs, and the suburban clubs especially, they make the most of holidays.

Cedarhurst, the seat of the Rockaway Club, is only twelve miles, or thereabouts, from Westbury. Since it started in Far Rockaway in 1878, the Rockaway Club has suffered in an increasing degree from the intrusions of settlers. People *will* buy lots and build suburban houses in its country; and as hunting cannot be successfully carried on in a country that is all lawn and kitchen-gardens, the Rockaway men feel that the days of their sport are numbered. But while any country is left them to ride over, they will ride. They keep about fifteen couple of hounds at their kennels near the club-house at Cedarhurst, and go out twice a week from September to January,

and in March and April. The obstacles they have to get over are mainly fences, from three feet six inches to five feet high. Walls are scarce on Long Island, as also are hedges and ditches. Like the Meadowbrook Club, the Rockaway combines the features of a country club with its hunting. It has an attractive club-house, with golf and tennis; and, like the Meadowbrook again, it has a strong polo team, which fights matches with the teams of the Meadowbrook, Myopia, Brookline, Dedham, Westchester, and other strong clubs.

The essentials to fox-hunting are men, horses, foxes, and a country fit to hunt over. New York can find the men and the horses, but it is not blest in its hunting country. Philadelphia is better off. The oldest Quaker cannot remember a time when there was not fox-hunting within reach of Philadelphia. Farmers thereabouts kept hounds, and hunted them, before the Revolution; and one finds allusions in contemporary literature to the zeal with which British officers hunted Pennsylvania foxes in pre-Revolutionary times from the Rose Tree Inn. The senior Philadelphia hunt of our day is the Rose Tree, at Media. It began about 1856, was reorganized in 1872, and got a charter

The Pack of the London, Ont., Club in front of the Clubhouse.

in 1881. It has about fifteen couple of American hounds from Delaware and Chester Counties, Penn., crossed with hounds from Maryland and Virginia. Its season is from December to April; its hounds meet three times a week, at seven A.M. two days, and at nine A.M. on Saturdays. Philadelphians, traditionally, have more leisure than the men of New York, and seem to be able to spare mornings, and indeed whole days, for hunting. Business men and young farmers follow the Rose Tree hounds, and the fields of riders range from five to twenty-five. The club-house is about a mile from Media. The club property includes the old stone Rose Tree

Tavern, a pretty modern club-house near it, and some eighty acres of land, on which is laid out the club's half-mile track, and part of its steeplechase course. Of the Rose Tree hunting, a member of the club writes: "For the old fox-hunter one of the most interesting features of the hunt is the working of the hounds on a cold trail early in the morning to find a fox. When the scent is first struck, none but the old experienced hounds can make it out; but when one of them cries, the pack will cluster around, and as they work it slowly toward the cover, the scent will grow stronger and stronger, until the cover is reached, when the burst of full cry from the pack gives fair warning that the fox has broken cover. Then all is excitement, and hounds and riders are away on the run. This cold drag frequently takes one or two hours to work out."

This has about it the flavor of real fox-hunting, a very different sport from the drag-hunting of less favored regions. One can learn with the Rose Tree hounds the tricks of the fox, and watch the contest between his strategy and the sagacity of the hound. The country about Media is rough; and the foxes usually get away, but not until they have given the hounds and

huntermen good runs. One learns with regret that the prosperity of this excellent hunt is hardly what it should be. It has a vigorous and enterprising young rival in the Radnor Hunt, with a club-house and kennels near Bryn Mawr, which seems to have superior attractions for the younger Philadelphians.

About Baltimore, fox-hunting is as old a story as in Philadelphia; and the history of it is not to be told in a paragraph. Hunt clubs have flourished and died there, and had their successors these many years. The active clubs at present are the Elkridge

Headquarters of the Green Spring Valley Hunt Club—the Old Stone Tavern on the Reisterstown Turnpike, Baltimore County, Md.

and the Green Spring Valley. The older and larger club, the Elkridge, has a club-house and kennels about five miles on the Roland Park side of Baltimore. Its house is large, and has a ball-room attached; and it serves many of the purposes of a country club. The club has an excellent pack, a large membership, and plenty of good hunting country within reach. Being strong on its social side, it does not disdain drag-hunting, particularly in the earlier part of the season; but foxes are its main reliance for sport, and the master, Mr. Samuel George, goes as far as is necessary to find them. Maryland hospitality makes it possible for the Elkridge meets to be held comfortably twenty-five miles from home, so that the country that is open to the club is practically unlimited. The younger organization, the Green Spring Valley, includes many members of the Elkridge. It started in 1892, hunts the wild fox only, and usually finds him. It has at present a pack of about a dozen couple of American hounds. Its members are young business men of Baltimore, with a supplementary sprinkling of farmers. It meets twice a week, at hours least inconvenient for working men, and its fields average about twenty. Its club-house is

an old stone tavern about seven miles out of Baltimore. The club has very much of the sporting spirit, is inexpensive, and of simple habits, and under the mastership of Mr. Redmond Stewart gives good promise of prosperity.

In Virginia, Maryland, the Carolinas, and Georgia, there has always been more or less unorganized fox-hunting by farmers and others in the winter months; so that the roll of the American hunt clubs with recognized titles and regular meets is by no means a complete index of the fox-hunting done in the United States. In Kentucky, too, fox-hunting is a sport as familiar as one would expect it to be in a State first settled by sportsmen, and always famous for its horses. But fox-hunting there seems to be an occasional recreation, the feature of a holiday, or taken up when the spirit prompts. There are good hounds in Kentucky, some of them of high degree and long descent. It seems not to be difficult to get together a pack, and horses are always abundant and fit in the blue-grass region. One reads of notable fox-hunting by large parties assembled for the purpose as early as August, and of ten-mile runs, over fence and wall, through underbrush and whatever intervenes, with large fields,

and many mounted ladies in the following. But of organized clubs keeping hounds and hunting on stated days, there is no report. Among the best-known Virginia packs is the Deep Run hounds of Richmond, which go out twice a week in the season. At Warrenton, in northern Virginia, in a horse-raising district, the Warrenton Hunt Club hunts twice a week, under the mastership of Mr. James K. Maddux. There is a sprinkling of English settlers near Warrenton; and the hunt is popular with them as well as with the other farmers, who train their horses in its runs. Sad to say, the country about Warrenton is unsuited to the pursuit of foxes, and it is only occasionally that they are hunted.

The Swannanoa Hunt Club of Asheville, N.C., affords sport to Asheville's winter visitors. It has a pretty club-house. The local foxes about Asheville know the resources of the country too well to afford adequate sport; but by importing stranger foxes, and turning them loose, the club gets very good runs.

Still farther south, at Aiken, S.C., Mr. Hitchcock's hounds help make life pleasant to refugees from a Northern winter. In his Northern home, near Westbury, Long Island, Mr. Hitchcock is one of the

Cross Country in the Genesee Valley.
The Genesee Hunt Club.

pillars of sport in the Meadowbrook Club. His hunting at Aiken is different from most other American fox-hunting. The country is rough, the woodland extensive, and the hounds are less under the huntsman's eye, and more on their own responsibility, than in the Northern hunting. After thorough experiment, Mr. Hitchcock has found the American hound better adapted to his use than English hounds, and has now a strong pack of modern American fox-hounds, about thirty couple, which he hunts all winter. His pack meets from December to May, three times a week at daylight, and goes out with

fifteen or twenty riders in the field. The fences about Aiken are rail-fences when there are any, but much of the country is not enclosed.

Except for the somewhat nebulous Agawam Hunt Club of Narragansett, the sole hunting stronghold of New England seems to be the seat of the Myopia Club, started in 1882 at Hamilton, some twenty miles north of Boston. It has a farm sparsely planted with golf-holes, and a comfortable club-house, which is the home of some of the members in the summer months, and is a centre of activities all summer long for golf enthusiasts and polo-players. The Myopias have tried fox-hunting, but found it impracticable, or at least too inconvenient, and have fallen back on drag-hunting as better suited for their circumstances. Their hunting begins early in September, and lasts three months. They have about twenty-five couple of hounds of British descent, which meet three times a week, and scour the country for twenty miles around. Their fields vary from fifteen to twenty-five riders. Their country is a country of stone walls three feet high and upward; and the obstacles being reasonably low, their runs are tolerably fast. Most of the Myopia huntermen are sons of toil,

doing business in Boston, and they adjust their sport to the more imperative demands of their more serious occupations.

In the Genesee Valley, in Livingston County, New York, there has been an organized hunt for nearly twenty years, the fame of which is exuberant among hunting Americans. Its headquarters are at Geneseo, the county town of Livingston County,

Meet of the Meadowbrook Hunt at Mr. Theodore Roosevelt's house, Oyster Bay, Long Island.

and the home of Mr. W. A. Wadsworth, M. F. H. Mr. Wadsworth and other members of his family, and other families, are owners of large landed estates in the Genesee Valley, and actually live, for most of the year, on or near their land. This makes the conditions of existence in the neighborhood of Geneseo different from those that ordinarily obtain in American farming country, which, as a rule, in the North at least, is owned in small lots by the actual cultivators of the soil. The Genesee Valley hunting is an indigenous growth, begun for the amusement of residents of the valley, conducted from the time of its organization at the cost and under the direction of the present M. F. H. The club has an organization, but its dues are nominal and it has no club-house. Mr. Wadsworth keeps up the pack, and mounts and pays the huntsmen and whips. Such reputation as the hunt enjoys is due first to him and to the durable and rational quality of his devotion to sport. The hunt finds other good backers in the farmers of the valley, in the owners of country places who spend a large part of the year there, and in earnest sportsmen from Buffalo, Batavia, Rochester, New York, Chicago, and other places, who hunt

regularly once or twice a week in the season. It also attracts visitors, who come in increasing numbers to get a taste of the quality of its entertainment. The hunting country is a strip of farm and woodland, twenty miles long or thereabouts, and from four to eight miles wide, through which flows the Genesee River. The country is beautiful; the enclosures are large; the fencing includes almost all varieties of rail, board, and picket fences. Horse-raising is one of the industries of the district, and the huntermen are well mounted. The hounds of the Genesee Valley Hunt hunt wild foxes three times a week from the latter part of September until it gets too cold, which usually happens about Christmas. Some drag-hunting was done last fall with a small pack set apart for that purpose; but drag-hunting is regarded in Geneseo as a subsidiary sport, to be winked at and endured in the present state of human weakness, but hardly to be countenanced, much less encouraged. Mr. Wadsworth's hounds are either imported or of English stock, and from twenty to thirty couple of them are always ready for work. The field of riders varies from twenty to fifty; and, though the numbers dwindle somewhat as the season advances, the hounds

A Meet of the

have a strong following as long as the hunting lasts. The country is too extensive to admit of earth-stopping, and the foxes usually get away, though eight or ten are killed every year; but the hounds usually find, good runs are the rule, and notable runs are common.

The best hunting in the Genesee Valley is in November and December. The prettiest and gayest hunting is in October.

Rockaway Hunt Club.

To be jogging after Mr. Wadsworth's pack about eleven o'clock on a Saturday late in October, is to be riding through a charming valley at a delightful time of year, with every prospect of five or six hours of happiness. On such a Saturday in 1894 the meet was at a village some eight miles from the kennels. It was a pretty village, the day was a perfect October day, and the meet of hounds and horsemen, of

ladies in carts and traps and on hunters, of participants and well-wishers and disinterested spectators, was a stimulating and cheerful sight. Then came the leisurely riding across country from covert to covert, through woods and down into gullies, over fences at one's leisure at the easiest place, all the time in the sunshine, with the brisk air making one younger with every breath of it, and the hounds working industriously, and keeping every observer's expectation primed.

And when presently, after an hour or more of progressive investigation, the hounds found and were off, what a stir and enlivenment, as the field broke into a gallop, and streamed off across country, over field and stream and fence and road, every emulous hunterman eager to better his place, every tyro shadowing his chosen pilot as closely as he dared, every bold and experienced rider speculating as he rides on the next turn of the pack, with a keen scrutiny as he rises at one fence for the weak place in the next one. When there is a weak spot or a low place, what a comfort to have it come conveniently into one's line! When there is none, but the rails rise high and strong across the field, what joy, when one has tightened one's rein

and made at them, to have one's horse actually clear them, and then to glance back and see the little group of less fortunate riders on the farther side! It is conceivable that there are men who like to jump high fences; but doubtless the more common experience is, that a five-foot fence affords a delightful sensation after one is about three-quarters over it, but that up to that point it is a solemn and unwelcome obstacle, that cannot be dodged without loss and regret.

The Button of the Montreal Club—the Oldest Organized Hunt Club in America.

Do you suppose any sincere person really regrets it when there is a check after even three or four miles of hard galloping? To stop while the hounds are running is misery, of course; but to pull up with one's bones all whole and one's credit saved, — how can any hunterman of sound discretion regret that?

The day I speak of, the fox got away; but what a good and satisfying day it was, and how proud that little fox should have been to have made so much sport for so many honest folks at such comparatively insignificant inconvenience to himself! The lady who fell off got on again; the man

Taking the Hounds out for Exercise. The Genesee Hunt Club.

who got the spectacular cropper wasn't hurt. The competent surgeon who usually rides in the first flight in the Genesee Valley runs got his exercise that day without ever getting off his mare, except to eat his lunch. And yet there are people who shudder at the hazards of fox-hunting, and grieve that sons of solicitous mothers, and fathers of dependent families, should venture their necks in such a sport!

Of the Canadian hunts, the chief is the Montreal Hunt, started as long ago as 1826, and probably the oldest organized

hunt club in America. Its kennels and club-house are in Montreal. Its hunting country lies in the islands of Montreal, Jesus, and Bizard, good farming country, with timber fences, stone walls, and ditches. The members get to the meets by train or otherwise, according to the distance. The hounds meet three times a week at eleven A.M., from the middle of August to the end of November. There is an earth-stopper among the club servants, a consequence of which is that eight or ten brace of foxes are killed during the season. The club membership is about one hundred, and the dues of $50 a year help to maintain the pack. The present master is Mr. H. Montague Allan.

The London (Ontario) Hunt, another strong club with a large membership and a suburban club-house, dates from 1885. It has a pack of a dozen couples, and usually finds the toothless and insensate aniseseed bag more convenient for its pursuit than the evasive fox. Under the mastership of Mr. Adam Beck, it sometimes takes its hounds across the Detroit River, and makes a field-day for the riding population of Detroit.

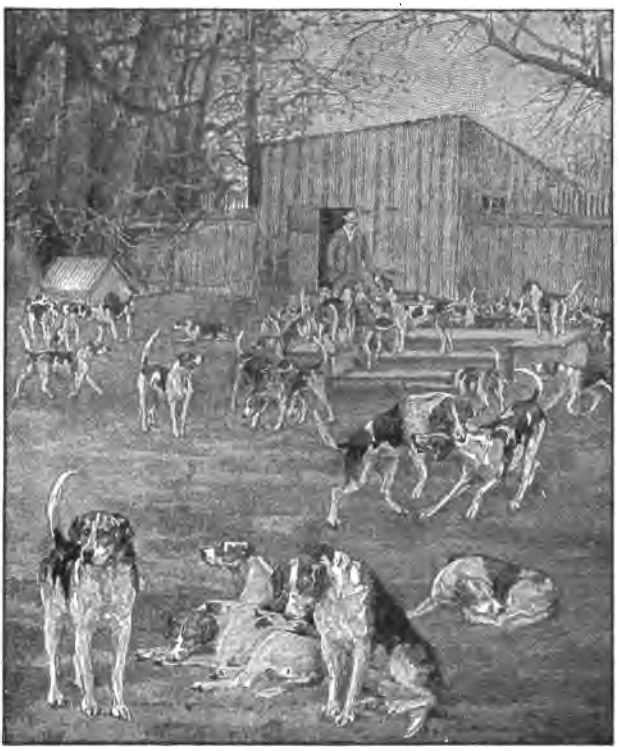
Toronto, the horse-dealing centre of Canada, has its hunt, of course; a drag-

The Pack of the Myopia Hunt Club.

hunt which combines the accomplishment of business ends with the pursuit of pleasure. Fifteen couple make up the present pack of the Toronto hounds, and Mr. F. H. Beardmore has them out three times a week during the short Canadian season.

With these twenty-five hunt clubs, — almost all of them started within twenty years, and most of them much younger, — it will be seen that hunting, as an American sport, has made a vigorous start, and promises to make a permanent and growing impression on the habits of our people.

Once the idea of the possibility of hunting is disseminated, the rest will take care of itself, and clubs will spring up where there is a demand for them. Chicago has everything that it wants. It will want hunting presently, and will surely get it. St. Louis, which already has a vigorous country club, has only a short step farther to take. Wher-



Where the Dogs are Kept. The Genesee Hunt Club, Genesee, N. Y.

The Myopia Club House at Hamilton, Mass.

ever there is wealth there will be leisure. Wherever there is wealth and leisure the horse will multiply in the land, and there will be hardy men who will dare to ride on his back. Once horse-riding becomes a habit in a highly civilized American community, we may expect hunting to follow. That is in part because hunting is a growing fashion, but much more because it is a sport of great merit, which is bound to win its own way wherever a chance is given to it. As one of the most picturesque of sports, it should be welcomed for the variety and color it brings to American life. Wherever there is hunting there are red coats — either to ride in or dine in — steeplechases, horse-shows, hunt-balls, polo-

playing, and much pomp and panoply of pleasure; all of which is highly decorative, and has a spectacular value, which affects the existence of thousands of people whose participation in it is confined to the not unimportant office of looking on. Hunting is virile, and it is wholesome. Men get hurt in it sometimes, but seldom very seriously; and many men get materially benefited.

Moreover, the money spent in hunting is spent in our own country, and goes directly into the pockets of Americans who need it. Whatever brightens country life, and checks the tendency of the cities to swallow up all the money, and monopolize all the fun, is a benefit. Whatever sport induces well-to-do Americans to disburse their surpluses in their own land, among their brethren, instead of flocking for that purpose to Europe, is also a benefit, and one the promotion of which no true patriot will care to hinder. Let us have as much of our fun at home as we can; and let us think twice before we sniff at any development of wholesome sport that helps to make that possible. Some men who hunt get health and strength from it, which they expend in activities more directly useful. Encourage them in

their hunting, for it does them good. Other men get less benefit; but their support helps to keep hunting alive, and their money is useful to the farmers, grooms, innkeepers, and surgeons, veterinary and otherwise, who have honestly earned it. Encourage them, too, for they are good for sport. Still other men hunt who, if critically considered, may be estimated to be good for little else. Of these it may be said, that though they may not be indispensable to sport, at least if they were not hunting they would probably be less innocently occupied. Encourage these also; for when they are hunting they are out of mischief, and, so far as lies in them, are fulfilling their mission in life.

Kennels of the Myopia Hunt Club.

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